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THE DENTAL DIGEST

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THE DENTAL DIGEST

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THE DENTAL DIGEST

VOLUME XXXVII

FEBRUARY, 1931

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Fractures of the Jaws*

By JACOB FRIEDMAN, M.D., F.A.C.S., New York, N. Y.

Fractures of the maxilla or mandible, in civil life, are not uncommon injuries. Of the two bones the mandible is more frequently fractured, as it is more exposed to trauma. At Lincoln Hospital these cases make up approximately 2.5% of the fractures admitted.

ETIOLOGY

Direct trauma, such as blows, is the most frequent etiological factor. The application of misdirected or unusual force in the extraction of impacted, unerupted or malposed teeth may cause fracture of the mandible.

Disease of the bones, rickets, osteomalacia or malignant growths, though rare, predispose to pathological fractures. These may occur also in bones weakened by cystic degeneration, such as dentigerous cysts, cystic odontomata or peridental cysts. These cysts may grow to large size.

Spontaneous fracture occasionally occurs in extensive osteomyelitis of the mandible.

CLASSIFICATION

Fractures of the jaws may be classified as follows:

- (1) Simple.
- (2) Compound.
- (3) Depressed.

Simple fractures without injury to the soft parts are very rare.

Compound fractures are the commonest type encountered. The compounding may be through the skin, through the mucosa of the mouth or nose, or into the alveolar sockets of the teeth. Adjacent vessels or nerves, such as the inferior or superior alveolar, palatal, lingual and infraorbital nerves, may be involved. Compression or obliteration of the lacrimal canal may occur with fractures of the maxilla.

Depressed fractures are confined to injury to the thin anterior wall of the maxillary sinuses.

SYMPTOMS AND DIAGNOSIS

The patient, on admission to the clinic or hospital, will give a history of injury. The nature, direction and manner in which the force was applied should be ascertained. In pathological fractures the force is slight and the patient may remember feeling a sudden sharp pain or hearing a sudden snap. The patient complains of pain localized to the fracture site and along the distribution of the sensory branches of the trigeminal (fifth) nerve. The power of mastication is lost and the proper occlusion of the teeth is impossible.

Examination reveals a facial asymmetry, with drooping of the corner of the mouth on the affected side. Exces-

* Read at a meeting of the Dental Staff, Lincoln Hospital, New York, N. Y., December 8, 1930.

sive salivation, hemorrhage and laceration of the soft tissues in the mouth are noted. Abnormal mobility and crepitus are pathognomonic of fracture. Where there is extensive loss of bone, the latter is absent. Numbness of the skin when present is due to pressure or injury of the sensory branches of the fifth nerve.

The x-ray (extra-oral and intra-oral) will verify the diagnosis and give information as to the line of fracture, comminution, loss of bone substance, displacement and the presence or absence of foreign bodies. It also gives information as to the condition of the teeth near the fracture line and shows the presence of teeth in the fracture line.

The underlying condition in pathological fractures will be demonstrated. The extent of the disease, the presence of cysts, osteomyelitis and tumors will be shown.

Before and after x-ray pictures should be taken to safeguard the practitioner from the legal standpoint.

COMPLICATIONS

(1) *Hemorrhage.* Primary hemorrhage may be considerable, but it is easily controlled by pressure. Secondary hemorrhage may occur, especially in cases where there is marked comminution of bone, and in cases developing infections with sloughing of the surrounding soft parts, and in the presence of foreign bodies.

(2) *False ankylosis,* due to a trismus of the muscles attached to the mandible, may occur. This condition is caused by trauma to the affected muscles, producing an edema. It interferes with opening the jaws and may require a

general anesthesia to permit reduction of the fracture.

(3) *The temporomaxillary joint may be injured* at the time of the fracture, and an osteoarthritis of the joint may develop, interfering with function after immobilization is discontinued.

(4) In fractures of the maxilla the *maxillary sinus may be involved.*

(5) *Infection.* Bacteria in the mouth or infected teeth adjacent to the fracture may cause the formation of abscess or cellulitis in the soft parts and bones. Infection delays repair. Involvement of bone produces sequestra with internal and external sinuses or peridental abscesses.

TREATMENT

The following classification of fractures of the jaw is a practical one, made because of its definite relation to the method of treatment:

- (1) Fracture of the maxilla.
- (2) Fracture of the mandible anterior to the last existing tooth.
- (3) Fracture of the mandible posterior to the last existing tooth.
- (4) Fracture of edentulous maxilla and mandible.
- (5) Multiple fractures and combinations of the preceding types.
- (6) Fractures complicated by loss of bone.
- (7) Delayed union and mal-united fractures.

The treatment of fractures of the jaws demand as perfect an anatomical result as it is possible to obtain. Failure not only will be disastrous from a cosmetic viewpoint, but will interfere with good function. A very small change in the position of the fragments may prevent proper mastication and re-

sult in an open bite. Slight discrepancies may be adjusted by grinding the teeth, while larger adjustments can be made by dental restoration. Often the damage is irreparable and motion of the jaws is associated with discomfort, and the malocclusion results ultimately in the loss of perfectly good teeth.

EMERGENCY MEASURES

- (1) The wounds of the soft parts are cleansed and hemorrhage stopped by pressure. Where possible, the wounds are sutured.
- (2) Broken tooth fragments, loose teeth and infected teeth are removed and the mouth irrigated with a warm antiseptic solution of normal saline or tincture of iodine.
- (3) The fragments are immobilized in a simple fixation, such as a Barton or four-tailed bandage. An x-ray is now taken and arrangements made for the application of the permanent reduction and fixation.

The chances of a good result with the use of bandage fixation alone are small in simple fractures, and in the complicated cases the results are often worse than no treatment at all.

To prevent infection, broken-down teeth and roots with septic processes should be removed. The teeth are thoroughly cleaned. Teeth in the line of fracture should be removed.

There is no universal method of fixation that may be applied to all fractures of the jaws. Each case must be treated individually. If splints are to be used, they should be constructed before the reduction. The simplest method is usually the best, and it should per-

mit an examination of the bones and of the occlusion of the teeth at the time of reduction and during the process of healing, so that any later accidental displacement may be noted. In addition, it should be sanitary and easily cleansed.

The type of fixation will depend on the displacement of the fragments. This displacement is determined by the degree and direction of the trauma, the obliquity of the line of fracture, the muscle-pull and the degree of laceration of the soft parts.

Very little displacement occurs in fractures of the maxilla. In fractures of the mandible the perfect muscle balance is upset and the unopposed muscles will cause displacement.

FRACTURE OF THE MAXILLA

In the maxilla the alveolar process is most frequently fractured, and often the palatal process is included. Contiguous bones also may be involved. This type of fracture is immobilized by intermaxillary wiring and a Barton bandage or chin-cup.

Marshall has devised a splint which is cemented to the maxillary teeth. The splint is attached by bars to a headgear. This splint permits movement of the mandible.

Fracture in an edentulous arch may be immobilized by the use of the artificial denture or a vulcanite splint, which is attached by metal bars bent to fit the face and fixed to a headgear.

Fractures involving the antrum may produce a subcutaneous emphysema of the cheek and eyelid. It is of short duration, disappearing quickly. These fractures need no mechanical fixation. If

the anterior wall is depressed, it may be elevated with the aid of a hook.

FRACTURE OF THE MANDIBLE ANTERIOR TO THE LAST EXISTING TOOTH

In fractures of the mandible anterior to the last existing tooth the teeth are used to adjust and immobilize the fragments. Intermaxillary fixation may be direct or indirect. Under the latter are the Barton and four-tailed bandages and the various headgears and chin-cups. These act by pressing the jaws together in correct occlusion. It is an unsatisfactory fixation, for the bandages slip easily and permit motion of the fragments. They are useful as additional supports.

Direct interdental ligation is a simple, easily applied fixation, permitting an excellent view of the occlusion of the teeth. Later displacements can be noted and adjusted. This method requires few instruments and is much less expensive than the special splints. Local anesthesia may be used.

Its disadvantages are interference with vomiting for any reason. Mouth-breathing is made difficult. This method should not be used where there is complete nasal obstruction. Mastication is impossible, but the patient may take sufficient liquid food to gain weight. Frequent irrigations of the mouth are necessary to keep it clean.

Simple Interdental Wiring (Gilmer's Method). A soft 24-gauge brass or 22-gauge annealed copper wire is used. Four teeth on each side of the jaw are chosen. One of the wires is placed at least one tooth from the fracture line, lessening the tendency to loosen the teeth in the immediate proximity to the fracture line. The teeth chosen are

wired singly and then in upper and lower pairs, and, finally, the upper and lower wires are twisted together. It is important that the twisting of the wires be always in the same direction. This avoids untwisting the wires. The ends of the wires are cut off short, turned toward the teeth and covered with dental compound to protect the lips.

Modifications of this method have been presented by Silverman, Oliver and Kazanjian. They differ only in the application and twisting of the wire.

Intermaxillary ligation may be secured by the use of small metal bands placed about the individual teeth on either side of the fracture line. These are fastened by wire ligatures, which are passed around the small spurs attached to the bands for that purpose.

Essig recommends the use of two 30-gauge wires laced about four or more teeth on either side of the fracture line, but omitting the teeth adjacent to the fracture line. Another wire is used to approximate the inner and outer lacing wires. This method is used in conjunction with some types of bandage.

Metal or vulcanite splints should be reserved for those cases where wiring or open reduction is contra-indicated. These splints should be constructed before the reduction is attempted.

FRACTURES POSTERIOR TO THE LAST EXISTING TOOTH

In fractures posterior to the last existing tooth the fracture line most often goes through the angle of the jaw. The displacement will depend upon the obliquity of the fracture and the muscle pull. A good occlusion of the teeth is usually obtained by interdental wiring, but anatomical reposi-

tion of the fragments is difficult because of the displacement. To obtain a good reduction, we may use, in addition to the wiring, a metal or vulcanite splint which is cemented to the maxillary molars on the side of the fracture. To this splint is attached a jackscrew whose function is to press on the ramus and keep it in position. The screw may be made with a saddle and exerting pressure directly on the mucosa over the margin of the ramus or with a rounded end that fits into a small drill-hole in the bone. The latter is the better type, as it will not slip and will not cause a pressure necrosis of the soft parts. The ramus of the mandible is adjusted by turning the screw governing the threaded thrust-bar.

Horizontal fractures of the ramus are uncommon. There may be very little displacement of the fragments, because the thick surrounding muscles hold the fragments in place. When deformity is present, it is marked. For these cases open reduction with suture of the bones with wire or kangaroo tendon is the method of choice.

Fractures without displacement will be held by interdental wiring. Moderate displacement may be adjusted by the use of the jack-screw.

Gaughlin recommends the following method of fixation of this type of fracture, when the other methods cannot be used. It may be used in place of an open reduction. Under local anesthesia a one-inch oblique incision is made through the skin over the coronoid process so that the upper end is just over the zygoma. The incision runs parallel to the branches of the facial nerve to the frontalis muscle. With blunt dissection the coronoid process is

reached. The displacement is now reduced by an assistant, and the fragments are held in position. A hole is drilled in the coronoid process just below the zygoma, and a wire nail $1\frac{1}{2}$ inches long is inserted so that its point impinges on the base of the skull and the head rests against the lower border of the zygoma. This prevents upward displacement of the coronoid process. The wound is closed and the jaws immobilized by interdental wiring. The nail is removed after four weeks.

FRACTURES OF THE CONDYLE AND CORONOID PROCESS

Fortunately, fractures of the condyle and coronoid process are very rare.

Extreme displacement is frequent. Reduction without operation is difficult. Open reduction presents the best chances of obtaining a good result. Involvement of the condyle with injury to the joint may result in an osteoarthritis of the joint and possibly a complete ankylosis.

It may be necessary to remove the coronoid process if the treatment instituted is unsuccessful.

In those cases without displacement intermaxillary wiring may immobilize the fragments and maintain the reduction.

FRACTURE OF AN EDENTULOUS JAW

In fractures of edentulous jaws interdental wiring is impossible. Direct wiring of the bone fragments will give the best results.

Where open reduction is not feasible, a metal or vulcanite splint, such as the Gunning splint, may be constructed or the artificial dentures worn by the patient may be wired after the removal of

several teeth to permit feeding. The jaws are kept immobilized with the aid of a bandage or chin-cup.

MULTIPLE FRACTURES

Multiple fractures of the mandible may be bilateral or unilateral. In 50% of the cases a fracture at the level of the mental foramen due to direct trauma is accompanied by a fracture through the angle at the opposite side, due to indirect force.

The treatment is the same for multiple fractures occurring in front or behind the last existing tooth.

In edentulous jaws open reduction with wiring or plating should be performed, bone sutures being removed after five or six weeks. Black recommends circumferential wiring in multiple fractures through the mental region. A vulcanite splint is made to cover the ridge of the mandible, extending beyond each side of the fracture. A small skin incision is made below each fragment. An antrum trocar and cannula are passed into the mouth on the lingual side of the bone, and a 16- or 18-gauge wire is passed through the cannula. The cannula is withdrawn and is passed down on the other side of the bone, and the other end of the wire is passed through the cannula and fixed over the splint. All the wires so passed are twisted over the vulcanite splint, immobilizing the fragments of bone.

FRACTURES COMPLICATED BY LOSS OF BONE

Fractures complicated by the loss of bone are not serious if the loss is small and the remaining fragments are in contact after they are aligned. Immobilization should be maintained for

a longer period in these cases because of the possibility of refracture.

Loss of a large section of bone will require bone-grafting. This operation should be delayed until after the disappearance of infection and all wounds have healed. While waiting, the jaws should be wired to prevent contracture of the muscles and increasing deformities.

DELAYED UNION AND NON-UNION

Union of the fragments is delayed by:

- (1) Insufficient or improper fixation.
- (2) Lack of proper contact of the fragments.
- (3) Infection of the soft parts and osteomyelitis of the bone.
- (4) Teeth in the line of fracture.

Non-union will occur where there is an interposition of soft parts or a great loss of bone. This non-union is temporary and is adjusted by operative repair, removing the cause.

MAL-UNITED FRACTURES

In mild cases of mal-united fractures grinding the teeth will adjust the occlusion. Greater adjustments may be made by constructing artificial dentures.

Malposition with incomplete union may be partially corrected by the use of orthodontic devices. If complete adjustments cannot be made, open reduction and wiring of the fragments should be attempted.

Infection of the soft parts or of the bone is the complication requiring the greatest attention. When the soft parts are involved, wet dressings of warm solutions should be used externally and hot irrigations intra-orally. Heat is to be preferred in place of the ice-bag.

Cold applications do not cause a subsidence of the infection. Should the process continue to form pus, the abscess is incised and drained extra-orally. For cosmetic reasons the incision whenever possible should be placed below the margin of the mandible. The wound is packed with plain or iodoform gauze.

Should an osteomyelitis develop, it should be treated according to its progress. Sequestra should not be removed until they have completely separated from the bone. The sinuses are dressed surgically every day. During the process of the infection the jaws should be immobilized, for union will take place in the involucrum before the infection subsides. In these cases reduction may be obtained by intermaxillary wiring or by direct wiring of the bone.

PROGNOSIS

The prognosis for the life of the patient is excellent. Rarely do we see a fatal result due solely to fracture of the jaws, not associated with other serious injuries.

The result of the local condition depends upon the reduction and immobilization of the fragments and the presence or absence of complications.

Simple, uncomplicated fractures of the maxilla unite in about four weeks and of the mandible in approximately six weeks.

Compound, comminuted and complicated fractures will require considerably more time.

Infection of either the soft parts or the bone delays union. Interposed teeth in the fracture line also retard the union of the fragments. The presence of sequestra in the suppurative process of

the bone will prevent osseous union. These should be removed as soon as they separate. Immobilization in these cases should be continued for at least three weeks after the healing of all wounds and sinuses.

The results are best in those cases where the fracture line is anterior to the last existing tooth. They are not so good where the fracture line is posterior to the last existing tooth.

Fortunately, fractures of the condyles are rare. The results are poor, usually resulting in a complete ankylosis requiring an operation to permit some function.

The stiffness present after the removal of the retentive apparatus disappears in from two to twelve weeks.

ANESTHESIA

As a rule, local anesthesia, intra-oral or extra-oral, will be effective and the nausea and vomiting of a general anesthesia will be avoided. A preliminary injection of morphine, gr. $\frac{1}{4}$, and atropine, gr. $\frac{1}{150}$, will be of great aid.

Fractures complicated by marked trismus will require a general anesthesia. The stomach should be washed out before the reduction, to minimize the nausea and vomiting. Wire-cutters should be at hand ready for any emergency.

As a substitute for general anesthesia, rectal avertin is suggested. There are practically no after-effects with this anesthetic. Although no cases are on record of its use, there seems to be no reason why it cannot be used to advantage in fractures of the jaws.

AFTER-CARE OF IMMOBILIZED JAWS

After the reduction cold applications

may be applied to reduce the possibilities of hemorrhage. Later warm applications will aid the absorption of the hematomas and reduce the edema of the tissues. Should the patient experience difficulty in breathing, he may be helped by the use of a nasal spray of adrenalin 1-1000 drams, one to an ounce of normal saline or of ephedrine.

An antiseptic-deodorant mouthwash should be used at frequent intervals, even as often as every hour. The patient will be much more comfortable with a clean, odorless mouth. Tooth decay and fetid and offensive breath are to be avoided.

FEEDING

During the first week the diet should be liquid only. Later the patient may be able to take semi-solid food. A glass tube or soft rubber tube is used. If necessary, nasal feeding may be resorted to.

The diet will consist of milk, raw and soft-boiled eggs, milk shakes, fruit juices, soups, beef extracts, cocoa, coffee, tea, tomato juice. Later finely chopped meat, cereals and soft puddings may be added.

Stiffness and decreased mobility are due to changes in the mandibular joints or to spasm of the muscles. Improvement will occur with exercise and massage.

CONCLUSION

Fractures of the jaws require the utmost of cooperation on the part of the dental and the medical professions. This condition belongs to both the dentist and the surgeon, and the patient who is treated after consultation of the two will receive the best care possible.

30 West 59th Street

DISCUSSION

M. Hillel Feldman, D.D.S., New York, N. Y.: We have men in the audience tonight who are probably going to tell Dr. Friedman something about fractures from the dental standpoint. I will call upon Dr. Barrett.

John J. Barrett, D.D.S., New York, N. Y.: I am entirely in accord with Dr. Friedman's discourse on fractures. The only suggestion I might offer is that when treating fractures at the angle I have noticed in several cases that it is more advisable to leave the third molar in the line of fracture for at least three or four weeks. The reason why I suggest that is because of

the fact that in extracting the third molar you are liable to cause displacement which you did not have before. Of course that might be disputed, but in several cases that I have undertaken to wire or reset or reduce I have noticed that it is better to leave the third molar in the line of fracture, unless there is edema or an abscessed condition.

Dr. Feldman: We have the Assistant Visiting Dental Surgeon of the Beth Israel Hospital with us tonight from Newark, N. J., Dr. Reich.

Jacob Reich, D.D.S., Newark, N. J.: I just remarked to Dr. Field when Dr. Friedman finished his paper that he had

covered almost everything that it is possible to cover in fractures. We see a lot of fractures, not so many at the Beth Israel Hospital, but at the Newark City Hospital. The greatest problem we have with fractures is in those that are brought in through accidents, automobile accidents particularly, where there are other more serious injuries such as skull fractures, and we make no attempt at all to reduce a fracture of the jaw if there is a serious injury like a skull fracture. We do not even resort to a four-tailed bandage during the time that we wait for the result of the fracture, whether it is a complete uneventful recovery or fatal. Of course if it is fatal, that lets us out. We simply use an elastic bandage, and with it we try to immobilize the part as best we can. The fractures that occur posterior to the last existing tooth are the bugaboos.

I find that I get pretty good results by calling in the services of an orthodontist, applying orthodontic bands and lug attachments and wiring the maxilla to the mandible. By that I mean that if you have a fracture of the mandible on the left side, with two molars and a bicuspid missing, it is very hard to wire that jaw properly by the Gilmore method. If you attach these orthodontic bands, with a lug bar crossing the space, you get a very good result.

Another thing that gives us a lot of trouble is the different wires we use. Brass wire, for angle fractures, we find discolors and deteriorates. We now use a wire made of Monell metal. It is thin, it is pliable, and still it is very strong.

Every once in a while we get a fracture where you have to resort to the open reduction method. We do not like

to do that very often. We have used a method where you go in later and have to remove those wires, and we try to keep away from that as much as possible.

Dr. Feldman: Dr. Field, of Newark.

Harry J. Field, D.D.S., Newark, N. J.: I should like to ask Dr. Friedman whether he has ever used the bone inlay, the sliding inlay without the use of wires. I thought of a point raised by Dr. Barrett. I think it is a very good idea to leave a third molar, but I do not believe in leaving it as long as Dr. Barrett suggests. I like to take it out at the end of ten days.

If the third molar is removed at once, we are apt to get a shifting upward of the ramus. If we leave the third molar in for three or four weeks, there is more chance of infection and osteomyelitis down below.

On the unilateral fractures—I think Dr. Friedman did not touch on that point—there is a very simple method illustrated by Dr. Brophy.

On the fractures of the maxilla, on one side only, all we have to do is to unite the maxillary and mandibular bicuspids with a simple wire. Where we have a fracture, even though it is very bad and goes right through the maxillary sinus, all we have to do is to use a little simple wire on the opposite side in the bicuspid region. We need only one wire for treatment of that case.

With regard to the orthodontist, if you use the Angle bands, you do not have to call in the orthodontist. They are very nice and easy to slip on. They act as excellent lugs, and you are able to pass the wires around them very easily.

I enjoyed the paper very much. It was excellent.

Dr. Feldman: Dr. Lippman, I think you must have dealt with some fractured jaws in the Navy.

L. B. Lippmann, D.D.S., New York, N. Y.: There is one type of splint that has not been touched on at all. That superseded almost entirely the wire in the dental splint for several reasons. You can simply cut it in lengths as you desire it, wire it up on the maxillary teeth, put a similar one on the mandibular teeth with the vertical uprights in the opposite direction and then just use orthodontia rubber bands to unite those. That in the service entirely superseded the wire interdental splint for this reason—for the very reason that Dr. Friedman mentioned—it does away with the danger from nausea. If the patient feels sick to his stomach, he can simply slip those rubber bands off.

Then, again, you find in the use of the wire ligatures to connect the maxillary and mandibular teeth that after they have been on for a week or ten days they gradually loosen and then are apt to irritate or form irritations on the side of the cheeks. The wires shift. Furthermore, there is less in the mouth to become corroded in the way of wire. There is actually less wire in the mouth, and this on the whole is simpler. It is cleaner, because you have less twisting in the wire, and the whole thing makes a neater and simpler splint arrangement.

There is another thing, the question of leaving a tooth in the line of fracture. Frankly, I have never yet seen a satisfactory result within the period of time that you expect it to result in a

union where a tooth is left in the line of fracture. I have always found it so. It has been my pleasure and the misfortune of patients to have had within a period of about eighteen months something like seventy-five or seventy-six different types of fracture cases. They were practically all types, and in every case where a tooth was left in the line of fracture union was delayed and it was always found necessary, in order to get results, to remove that tooth. Even if you do get a slight upward drag of the ramus where the line of fracture is posterior to the third molar or posterior to the last molar, it does not make any great difference in the end-result, because you will find that if you radiograph that jaw a month or two or three months after the union has taken place, the ramus has taken care of itself and rounded itself down. You will find that a callus has formed, and that no bad results will come of it.

Question: I should like to ask about the treatment of cases where the ultraviolet ray was used.

Dr. Lippman: The only time we used that in fracture cases was when we had a periostitis or some such condition in conjunction with the fracture. We got very good results with it.

Dr. Feldman: It may seem strange to some of you, but I treat some fractured jaws, where there is no displacement of the parts, without even a bandage. If the function of a reduction of a fracture is to prevent pain on movement of the parts, and if we find that the patient who has a fracture at the angle or even at the symphysis has no displacement of the parts, I see no necessity for subjecting the patient to the discomfort of closing his mouth for a

month, so long as he experiences no pain on opening or closing the mouth, and, if in opening or closing the mouth, he does not cause a rubbing of the fractured parts against one another to cause pain. I had occasion recently to treat a case of this kind in this way, and I found that there was an excellent result, because the radiograph showed that the parts were in almost perfect relationship, just the slightest lifting of the ramus from the body of the jaw. With instructions to the patient to live upon the same diet as if he had his jaws wired together, I found that I got union in just the same way as if the teeth had been interdentally wired. And, naturally, the bandage is unnecessary.

So you will find that the edema will subside without any trouble if the patient will live on liquids, keep his mouth closed as much as he can, and speak as far as possible with the teeth in position, in relationship with the maxilla.

Let me caution you in extracting third molars, where the patient gives a history of an injury, that you take a pre-operative roentgenogram extra-orally rather than an intro-oral film.

I had an experience several years ago with the extraction of a third molar which was shown completely upon the intra-oral film. Yet during the operation I discovered a fracture posterior to the third molar, and it was only then that I got the history of the patient that he had been in an accident several weeks before his visit to the office, his visit being occasioned by a pain which developed in the region of the third molar and gave him the impression that it was simply the tooth that needed extraction. And since then I have always taken extra-oral roent-

genograms in the extraction of third molars which are at all suspicious, and that would save many a lawsuit.

In the early part of Dr. Friedman's paper he mentioned the reduction of a fracture under general anesthesia, but in the latter part of his paper he supplemented it very well with an anesthetic which he claims does not cause nausea. With that one exception of using an anesthetic by rectum, where there would be no nausea, I would say that general anesthesia has no place in the reduction of fractures.

Several years ago I was called in by one of the surgeons at the hospital to reduce a fracture under ether. I objected to the reduction taking place under ether, but the patient insisted upon it, and the very thing that I objected to took place during the operation, vomiting, and vomiting afterward, and the wires had to be removed. It was all a waste of work.

I do not know whether you got Dr. Friedman's point about reducing a fracture under local anesthesia. But if he meant what I mean, I find that it is good practice, just before the wires bring the mandible and maxilla into relationship with each other, to give the patient a mandibular injection on both sides. Then, when the final movement of the jaw into position is brought about, the patient does not suffer that excruciating pain of relating the jaws for the reduction of the fracture.

The most serious problem in relation to the reduction of fractures is the matter of handling a fracture of an edentulous jaw. There we have no teeth to ligate to one another, or, if there are any teeth present, they are usually very loose and pyorrhetic. In the past we

have used rubber dental splints, but it is a good many years since I have introduced a rubber splint, and I do not believe that it has a place in dental practice today, especially when we speak of keeping the mouth clean during the period of the introduction of that rubber splint or any other splint. It is impossible to keep the mouth clean with an interdental splint of rubber.

An edentulous jaw fracture usually occurs in a patient advanced in years. If it were my choice, I would say to permit that fracture to heal as best it can in preference to the open reduction method. I am sure that when a man is advanced to the age of sixty or even a few years this side of sixty, the matter of esthetics should not play much of a factor in the reduction of his fractured jaw. The open reduction, of course, is a very effective means of reducing an edentulous fractured jaw, but it involves quite a serious operation, and, after all, I believe that from the prosthetic standpoint it is possible to give that patient some masticatory apparatus after the jaw has healed, even though the parts are not in the relationship in which they were before the fracture. So I believe that the use of common sense should prevail in the handling of fractured jaws of people of advanced years.

The matter of applying cold or heat to a swelling perhaps does not bear direct relationship to the treatment of fractures, but it is a very important point to bring up in the discussion of any infections around the face. The dental profession has always been very wary about applying heat to a swelling. That has not been so with the medical profession. Personally I agree thoroughly with Dr. Friedman when he says

that ice has very little value in its application to a swelling. When we have a swelling, we have either edema or pus. If we have pus, what is the good of the ice-bag on the face? We have to drain the pus. Either the case is ready for draining at the time we see the case the first time or it must be poulticed in order to be drained. But surely there is very little use for the application of ice when there is an active infection present, and what we need is heat in order that we may bring more blood to the part.

On behalf of the Dental Board and those present I want to thank Dr. Friedman for his very excellent paper. If he has any more discussion to add to what he has given or to any questions that have been brought up, we should be very glad to hear him.

Dr. Friedman: Just a word about the removal of teeth from the fracture line. That is a question that is probably unsettled and will remain unsettled. There is no question but that it will delay union. Usually a fracture is a complete fracture, and I do not believe that the tooth in the line of fracture will increase the deformity when it is removed. The position of the fragment is held not by the tooth itself but rather by the position of the muscle pull. If the deformity has already occurred, I do not believe that the removal of the tooth will increase it. In nearly every case I have seen in which the tooth has been left, the patient required an extraction at some later date. The union was delayed over at least a few weeks.

In the removal of wires in the open reduction of a fractured jaw, remove them anywhere from five to six weeks. The case heals as a clean case at the

end of that time. Union has occurred, and the wires should be removed by then. The mandible itself is such a superficial bone, comparatively, that removal of the wires is not a great source of discomfort to the patient or to the surgeon.

As to the bone inlay, personally I have not had any experience with it in the jaw itself. Here in civil life we do not find such great loss of bone in fractures of the jaw. The usual loss of bone is small. It is only during periods such as the past war that we have injuries due to projectiles which cause extensive loss of bone. Where we have real extensive loss of bone, probably a bone graft obtained from the tibia will best replace the fragments in good position and aid healing.

I said very little about fractures of the maxilla because our experience here has been that patients coming in with fractures of the maxilla usually have accompanying fractures of the skull, they are very sick and we do not spend much time worrying about the fractures of the maxilla. We spend most of our time worrying about the general condition of the patients and trying to get them over the fracture of the skull and let the dentist worry about the teeth later on.

Ultra-violet ray is useful as a general stimulant. Whether it has any specific effect directly on the fracture site is questionable. We know that in infections ultra-violet ray is very beneficial,

and we know perfectly well that if we have infections and put them out in the ordinary sunlight, we get still better results than with the ultra-violet ray.

About Dr. Feldman's putting up jaws without any retentive apparatus, personally I believe it is impossible not to have crepitus at the fracture site if you do not immobilize the fragments. The two fragments move independently. Ordinarily the jaw will move in a uniform way. The muscles control it. But as soon as there is a dissolution of the continuity of the bone, the two fragments move independently and I believe that you will have crepitus. And, if he bases his treatment on the question of whether or not the patient has crepitus at the fracture site, I believe he would wire all of them.

On open reduction, as far as open reduction itself is concerned, the mandible is a fairly superficial bone, and open reduction is not an operation that must be looked upon as a scarecrow. It should be saved for a definite type of case, one that really needs it, either convoluted fractures or multiple fractures, which require it. I would not recommend it in all simple fractures or in all fractures in which we have a single line or a double line. In fractures that can be maintained by any other type of fixation I should prefer that type of fixation to the open reduction method, but I would not let the open reduction method scare me away from it.



The Sphenopalatine Ganglion*

By JOSEPH S. STOVIN, PH.B., M.D., New York, N. Y.

Instructor in Rhinology, New York Polyclinic Medical School and Hospital;
Adjunct Otolaryngologist, Hospital for Joint Diseases, New York

I shall describe briefly the anatomy of the sphenopalatine ganglion, including the distribution of its branches, and shall emphasize the points of special interest to dental surgeons.

The sphenopalatine ganglion is known also as Meckel's or the nasal ganglion. It is one of the largest nerve centers. The ganglion is situated in the sphenomaxillary (pterygopalatine) fossa about 7 mm. below the superior maxillary nerve. This fossa lies below the greater wing of the sphenoid bone, below and behind the apex of the orbit and at the point of junction of the pterygomaxillary and sphenomaxillary (infra-orbital) fissures. The fossa communicates with the orbit by the infra-orbital fissure, with the nasal cavity by the sphenopalatine foramen, and with the infratemporal fossa by the pterygomaxillary fissure. Thus we see that it is in close relationship with the orbit and the sphenoid, ethmoid and maxillary sinuses, the latter being of special interest to you. There are five foramina opening into the fossa, an important one being the foramen rotundum, which transmits the maxillary nerve.

The sphenopalatine ganglion receives sensory, motor and sympathetic roots. The sensory roots arise from the maxillary nerve in the sphenomaxillary fossa by way of two or three sphenopalatine

branches. The motor root is from the facial nerve by way of the great superficial petrosal. This arises from the geniculate ganglion in the facial canal. It is joined with the great deep petrosal from the carotid plexus, a sympathetic plexus to form the Vidian nerve or the nerve of the pterygoid canal, which enters the sphenopalatine ganglion as one nerve. The Vidian nerve has also received a twig from the otic ganglion.

The sphenopalatine ganglion has extensive distribution, both directly and reflexly, and is capable of giving symptoms to almost every part of the body. That is the reason for its great importance in medicine, especially to rhinologists. I shall mention a few of the symptoms, directly attributable to this ganglion, relief from which is obtained by the injection of it with an anesthetic solution. Vasomotor rhinitis, including hay fever; neuralgias of every part of the head, including vague pains and aches whose etiology may baffle us, and pain in an ear of normal appearance are only a few of the symptoms that we are now able to relieve by injection of this ganglion.

There are four main groups of branches of this ganglion:

- (1) Orbital or ascending.
- (2) Palatine or descending.
- (3) Nasal or internal.
- (4) Pharyngeal or posterior.

The orbital or ascending branches

* From a clinic presented before the Northern District Dental Society, New York, N. Y., November 20, 1930.

supply the mucous membrane of the sphenoid and posterior ethmoid sinuses.

The descending or palatine group is divided into the anterior, middle and posterior palatine nerves. They descend through the posterior palatine canal and accessory canals. The anterior palatine nerve is of special importance to you. After emerging from the palatine canal, it runs forward in a groove

forward on the nasal septum down to the incisive canal, where it emerges through the anterior palatine foramen, forming a plexus with the nerve from the opposite side and supplying the anterior portion of the palate, the gums and the incisor teeth. Branches from this group communicate with the anterior superior alveolar branch of the maxillary nerve.

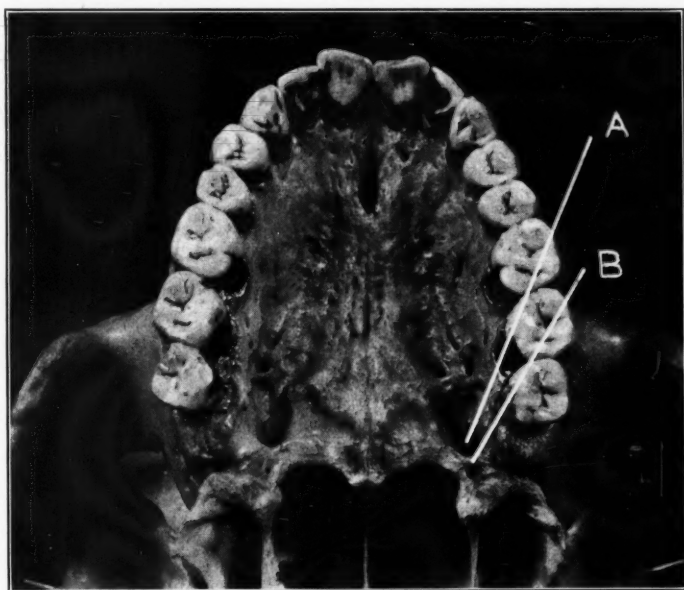


Fig. 1

A. The posterior palatine foramen. B. The posterior ridge.

on the under surface of the hard palate and is distributed over the roof of the mouth and the medial side of the gums. At the anterior part of the palate it joins the terminal portion of the nasopalatine nerve, which is one of the longer branches of the internal or nasal group. This nasopalatine nerve runs

The fourth group, the posterior or pharyngeal group, is of no great importance to dental surgeons, as it supplies chiefly the nasal part of the pharynx.

The sphenopalatine ganglion has assumed great importance in recent years because of the relative ease with



Fig. 2

Needle inserted in posterior palatine foramen. Finger on posterior ridge.



Fig. 3

Needle inserted in the posterior palatine canal and lying in the sphenomaxillary fossa

which it can be reached for injection, and because of the many conditions in which such injection has been found of benefit.

In the first place, of course, injection of the ganglion with some anesthetizing fluid such as novocain can be employed to obtain anesthesia in dental

often in and around apparently normal teeth, who are greatly helped by the injection of the ganglion with other substances, such as alcohol.

This ganglion can be reached for injection by three routes:

- (1) The lateral or external route.
- (2) The intranasal route.

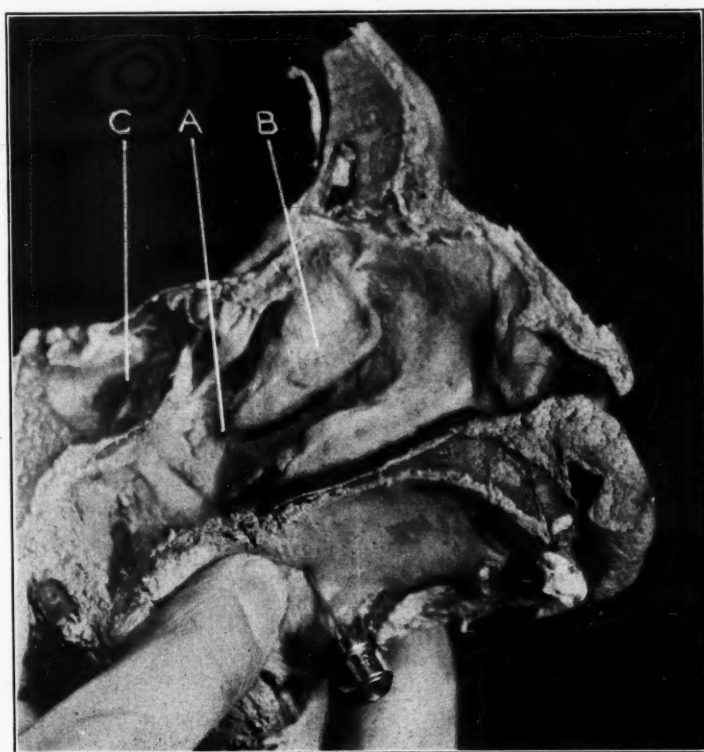


Fig. 4

LATERAL NASAL WALL

A. Area of sphenopalatine ganglion. B. Middle turbinate. C. Sphenoid sinus. Finger is on the posterior ridge of the posterior palatine foramen, and needle is in the canal.

operations. But, besides this, there is a large group of patients with vague aches and pains in the head, centering

(3) The route through the posterior palatine canal.

The last is the one most easily prac-

ticed. By it we always enter the sphenomaxillary fossa, into which the upper part of the canal opens, and therefore always come in contact with the ganglion.

The posterior palatine foramen is located on the roof of the mouth and lies opposite the approximation of the second and third molar teeth. It is round and fairly large. The best way to locate it is by palpation rather than by measurement. The posterior wall of the foramen usually extends down a little lower than the anterior and therefore is more prominent (Fig. 1). This projection is easily palpated with the index finger. This method is especially useful in edentulous mouths.

For the injection we use a 22-gauge needle, about 4 to 6 cm. long, and a Luer syringe. We may use either a straight needle or one which is bent near the hub at a 45-degree angle.

The patient's mouth is cleansed with an antiseptic solution, and the site of injection is swabbed with mercurochrome or half-strength tincture of iodine. The head is extended. Locate the foramen by palpating the ridge which

forms the posterior boundary of the posterior palatine foramen. With the index finger of the left hand on this ridge, insert the needle into the foramen and into the canal for a distance of about 3.5 cm. (Fig. 2). Never force the needle. If you meet with resistance, the needle either has not entered the foramen or else is not pointing in the proper direction (Figs. 3-4).

For anesthetic purposes 1% novocain either with or without adrenalin may be used. For analgesia a solution of 5% phenol in 75% alcohol may be injected. The latter may produce much pain for several hours, but it can be readily alleviated with amytal or luminal. Relief from an alcohol injection usually lasts from several weeks to several months.

The only complication of any note that can occur from this injection is transient diplopia or double vision, which is caused by the anesthetic fluid entering the orbit. This usually lasts about an hour and should not be cause for alarm.

160 West 87th Street



A Reply to Dr. Fred D. Miller's Article on "Why Should Students be Permitted to Fill Root Canals?"

By ALFRED WALKER, D.D.S., New York, N. Y.

The query of Fred D. Miller in the October (1930) issue of *THE DENTAL DIGEST*, "Why Should Students Be Permitted to Fill Root Canals?" and the reasons which follow, expressing the author's opposing views, are so rich in naïveté that one wonders whether or not he has really given serious consideration to the question.

At the very beginning either he misquotes U. G. Rickert, or, if the quotation is correct, he must upon reflection conclude that Rickert meant that he *knew* of only two men in the world whom he would permit to fill the canals of a molar tooth for him. In the next paragraph he states that numerous authorities admit that for mechanical reasons alone the canals of many teeth cannot be filled. Quite so, and under the circumstances the correct procedure is obvious.

Taking up the writer's statement that he wasted seven years in a serious effort to fill the canals of pulpless teeth, are we to deduce from this that, because Miller has failed, all others who undertake to develop their pulp-canal technic also must fail, and that therefore there must be a general retreat? We quite agree that some of the x-ray films in the article under discussion bear evidence of effort, but something more than painstaking effort enters into successful pulp-canal therapy.

If after eighteen years of practice and effort one still lacks confidence to fill the pulp canals of teeth successfully,

it becomes a part of wisdom and good judgment to discontinue further attempts.

Perhaps reading between the lines may suggest a possible explanation for failure in this instance. Miller states, for example, that he spent fourteen hours on the roots of a mandibular molar. This certainly suggests failure to survey conditions carefully or some lack in technical ability. We are convinced that it was not lack of speed, since he tells us that twenty-two open cavities which had not previously been touched were opened and stopped in two visits. It is commonly recognized that individuals will develop a high degree of skill in some particular operative procedure, and, try as they will, they cannot reach the same degree of accomplishment in procedures that demand manipulative ability of a different character.

The author further says, in the caption for Figs. 5 and 6: "Two instances of accidental fracture in young boys—in the writer's opinion, the only justifiable root-canal operation, if teeth and patient are periodically 'checked up' in the mouths of 'controlled patients'."

This paragraph is rather indefinite and not entirely clear. Obviously he would include young girls. Does he mean to infer that accidental fracture would provide conditions that are especially favorable for pulp-canal therapy? In Fig. 5 we see a decidedly faulty pulp-canal filling; therefore is it

not a safe conclusion that other steps in the handling of this case were equally faulty? Referring to Fig. 6, he tells us of a case that had been treated by the "cotton-exchange" method for five or six years. It would be difficult to imagine a more dangerous tooth than one with such a history. Why has it been allowed to remain to this date if the boy's health is paramount? Apparently the esthetic takes precedence here again.

If Miller's conclusions are based upon deductions which may be made from an interpretation of these two films, his attitude may be easily understood. Nor do the other cases referred to present anything new. Similar instances have been reported repeatedly and are usually found to be the result of errors in selection of teeth to be treated or faulty operative technic or both, not omitting

the obvious fact that in spite of every precaution some failures must follow, as in every endeavor. But it has been found that as our technic is refined, the percentage of failures declines.

When Miller states that he has "yet to see in a dental school a complete chain of aseptic technic in the conduct of root-canal operation," he admits that his visits to dental schools have been limited indeed. He asks, "Do students in dental-school clinics fill canals with care?" Under proper supervision they must, and, what is more, they do. And "where did they get the experience?" Just where they should get it—in the well supervised clinic at the school, where they may work under trained instructors who can and do perform the operations themselves, else how could they instruct the students?

100 West 59th Street.



[EMPHYEMA OF THE MAXILLARY SINUS]

The characteristic symptoms are an increase in temperature, considerable pain, a feeling of fullness in the head, and an abundant discharge of fluid, watery, mucous or mucopurulent in character, from the nostril of the affected side. There is considerable pain, with tenderness and edematous swelling of the face, and, in many cases, the thin bone may crepitate under pressure. The pain is often expressed by the patient as extreme pressure or neuralgia.

—SMITH.

Clinical Laboratory Methods in Dentistry

By NATHANIEL FREEMAN, D.D.S., New York, N. Y.

Adjunct Dentist, Mount Sinai Hospital and Montefiore Hospital

V

Other diseases occurring in the oral cavity due to bacteria or their toxins are syphilis, tuberculosis, actinomycosis, etc. These are specific diseases, as we know that they are definitely incited by micro-organisms.

COURSE AND SYMPTOMS OF SYPHILIS

Syphilis, or lues, is a chronic infectious disease caused by the spirochete *pallida* and characterized by lesions in any part of the body.

There is an incubation period of approximately four weeks from the time of infection to the appearance of the initial lesion or chancre. During this time there is no evidence of impending disease.

The primary stage, or stage of chancre or secondary incubation period, lasts about six weeks. This stage is terminated by the sudden appearance of the eruption, evidence of the infection gradually invading the system.

The secondary stage begins with the appearance of the eruption and ends with the disappearance of evidences of an acute active systemic infection. This stage may last for a few weeks, several months or a year.

The tertiary stage usually follows the secondary, but does not occur in many cases. This stage is characterized by the presence of lesions due to isolated local infections.

Syphilis presents analogies to three types of diseases. At first it is a focal

infection represented by a local lesion. Then, as it passes into the secondary stage, it resembles the acute specific infections, especially the eruptive fevers. In its tertiary stage its lesions are localized foci of inflammatory tissue, known as *granulomata*, which characterize such chronic infectious diseases as tuberculosis and leprosy. The secondary manifestations of syphilis are those of an acute systemic disease. The tertiary manifestations are those of a chronic disease sharply localized in its activity.

The first event in the course of lues is the inoculation of spirochete *pallida* into the skin or mucous membrane. There must be a break in the epidermis. Unbroken skin furnishes protection against infection; however, minute microscopical breaks furnish the readiest means of inoculation.

Chancre, or the initial lesion, is usually located on or about the genitals, but may be on the mucous membrane of any of the orifices of the body. It is generally seen in the young adult and is a perfectly round, persistent erosion, with slight to very marked induration at the base and with a surface covered with a thin fibrinous membrane, which on removal discloses a surface that oozes considerable serum. It is painless and is associated with an irregular, freely movable adenopathy on the side of the lesion. The disease spreads into the contiguous lymphatics much before the appearance of the chancre, hence

the failure to prevent the spread of lues by the excision of the chancre.

In the mouth, chancres appear on the lip, tongue, gingivae and tonsils. Confirmation of the diagnosis at this stage is made by the dark-field examination.



Chancre on the lip.

This is best done by slightly scarifying the suspected lesion and obtaining a little serum. This is transferred to a small cover slip, which is then placed on a hollow ground concave glass slide which has a small amount of vaseline placed around the concavity; the cover slip is inverted and the side with the drop placed so that it fits into the concavity. This is then examined with the dark-field illumination.

Another manifestation seen in the mouth is the mucous patches or secondary syphilids. These occur in the form of a round or oval lesion, beginning primarily as small grayish-white, sharply defined spots and representing a beginning syphilitic papule. As they enlarge, their surface covering becomes altered because of the heat, moisture and pressure from below of the round-

cell infiltration. On removal of the grayish shining covering, spontaneously as a rule, an erosion is exposed.

Differential Diagnosis. Traumatic lesions, erosions and ulcers are apt to be in relation to carious teeth or poorly fitting dentures, or there may be the history of the ingestion of some corrosive or irritating substance.

Frenum ulcers are often seen in children suffering from "whooping cough."

In aphthous stomatitis the onset is sudden and the condition is characterized by the appearance of vesicles which quickly rupture and leave small round yellowish erosions or ulcers surrounded by a very red areola. They are painful and occur in crops in such a manner that vesicles, erosions and ulcers are often associated. Pain is the chief diagnostic symptom.

Erythema migrans or geographic tongue can hardly be mistaken for syphilitic lesions, for in this condition there is a thickening of the epithelium, which desquamates in such a manner



A mucous patch.

that the edges appear raised and have an arch or ring-shaped appearance. The denuded epithelium discloses a smooth

red surface. Its change of appearance from day to day is a sign characteristic of this condition.

Some lesions of Vincent's infection, including mercurial, arspenamin and some types of bismuth stomatitis, may resemble ulcerative secondary syphilids. The differential diagnosis may be difficult, but in typical cases, in which there are primary localization about the last molars, bleeding swollen gingivae, pain on eating, the typical fetid odor and the enlarged, painful draining lymph nodes, the diagnosis is almost certain. Smears for Vincent's organisms will usually confirm this.

In herpes zoster there is an associated neuralgic pain. The limitation of the eruption to one side and along the course of the nerve filaments, plus the associated painful lymph nodes, aids in the differentiation.

The congenital, minute, very slightly elevated pin-point to pinhead-sized yellowish spots, becoming more pronounced upon stretching the mucous membrane and known as *Fordyce's disease*, can hardly be mistaken for syphilis.

The lesion that characterizes the third stage is known as a *gumma* or tertiary lesion. This is a mass of inflammatory tissue from the size of a pinhead to that of an olive or larger. It is usually round or oval or disc-shaped. At first it is a firm vascular tumor, but it soon softens, breaks down at the center and, if it opens on a free surface, forms an ulcer. It is followed by scar tissue, which replaces the normal tissue in which the gumma occurred. No tissue in the body is exempt from the lesions of tertiary syphilis.

Hereditary syphilis is syphilis trans-

mitted to the fetus in utero. With the exception of the initial lesion, hereditary syphilis may produce any manifestation of the acquired disease. There is a syndrome, usually associated with hereditary syphilis, that is known as *Hutchinson's triad*, which is comprised of *deafness*, *interstitial keratitis* and *Hutchinson teeth*. Other distinguishing features are the saddle-nose and rhagades, which are fine, radiating lines surrounding the lips.

Hutchinson Teeth. Deciduous teeth of hereditary syphilitics sometimes show defects in development, but the perma-



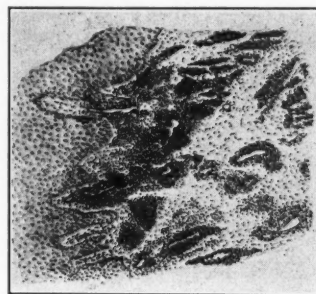
Syphilitic ulceration.

nent set are usually the ones affected. This condition is most marked in the maxillary central incisors. The teeth stand apart, are peg-shaped and smaller than normal, with a crescentic notch in the incisal edge which extends onto the labial surface.

Another distinguishing sign claimed by some to be associated with hereditary syphilis is the *tubercle of Carabelli*. This is a supernumerary tubercle found on the median side of the permanent first molars. This malformation is fre-

quently present in persons who are not congenitally syphilitic, so it is rather impossible to regard this as a positive and reliable means of diagnosis. We make mention of it here because of the prevalent views regarding it.

Histopathology. The syphilitic lesion is histologically a granuloma—a mass of granulation tissue, such as is produced by numerous infectious agents which elaborate mildly irritating toxins that cause a correspondingly slow reaction in the tissues, characterized by a highly vascular structure and by ex-



Section from a primary syphilitic nodule of the mucous membrane of the mouth showing collections of cells about the blood-vessels in the submucous tissue.



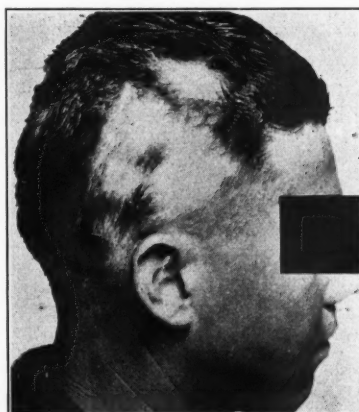
Syphilitic caries.

treme involvement of the blood-vessels in the process.

Unlike ordinary granulation, it is unable to become organized into healthy scar tissue. It undergoes either degeneration or necrosis and, except possibly in lesions of the most delicate character, is replaced by scar tissue.

TUBERCULOSIS

Tuberculous lesions of the mouth and contiguous tissues are comparatively rare, despite the presence of a pulmonary condition. The lesions or ulcers, when present, commence with the formation of miliary tubercles or



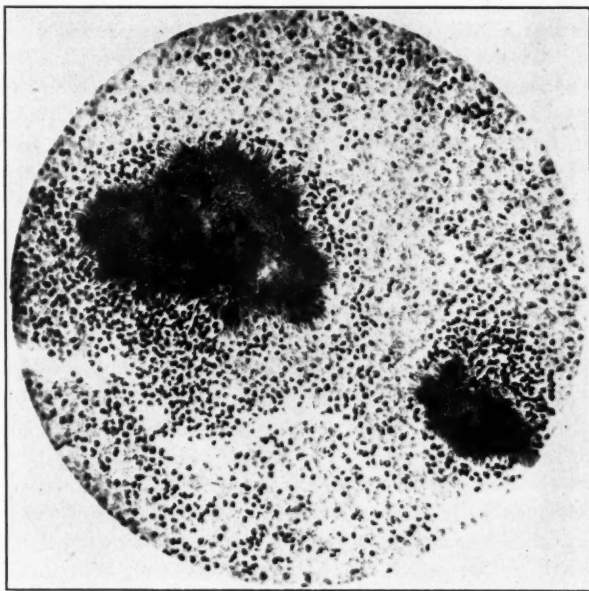
Alopecia syphilitica.

of larger tuberculous masses in the stroma of the mucous membrane. These masses soon degenerate, soften and form ragged ulcers.

The diagnosis is made by smears, which are stained for the tubercle bacilli as previously described. A form of inflammation said to be associated with tuberculosis is the condition known as *lupus*. The lesion consists of small, multiple nodules of newly formed tissue

in the cutis or mucosa or submucosa. By the formation of new nodules and a more diffuse cellular infiltration of the tissue between them the lesion tends to spread, and by the confluence of the infiltrated portions a dense and more or less extensive area of nodular infiltration may be formed. Considerable controversy still exists regarding its

proliferative process, often leading to the formation of large fungus masses, which may become calcareous. Abscesses, ulcers and fistulae are the most marked lesions in parts near the surface of the body. The excitant of the disease is the *actinomyces bovis*. The organism often grows in the tissues in the form of little rounded



Photomicrograph of actinomyces or ray-fungus.

etiological aspect, many authorities considering it not to be of tuberculous origin.

ACTINOMYCOSIS

Actinomycosis is a disease which is of occasional occurrence in man, but is more common in the domestic animals. The disease is more frequently characterized by a slow suppurative and

masses, pinhead in size. They may be transparent or grayish-white or yellow or dark in color. Under the microscope these masses often appear in the form of a dense group of radiating filaments with more or less bulbous ends, hence the common name *ray-fungus*.

5 East 57th Street

Technician versus Dentist

By LEONARD L. McEVOY, D.D.S., Homewood, Ill.

The question of official recognition of laboratory technicians has been with us, more or less, for some time. This of course is but a step in the path of progress and the desire of humans to better themselves. I believe that such recognition but begs the question and can only lead to a more vital and important issue, namely, licensure of technicians to perform services directly for the patient.

In the attempt to arrive at conclusions that might bear truth, let us analyze the situation of the relation of laboratory worker to dentist. In the field of operative dentistry we may say that practically no work is sent to the laboratory. In the prosthetic division we have no such easy conclusion at which to arrive. Some dentists send all their work out and some send none, with all stages intervening. Let us say that two-thirds of the prosthetic work is referred to the technician. Of this a small part, say one-third, carries definite instructions as to the course to pursue, leaving one-half of all prosthetic restorations to the laboratory worker, outside, of course, of the impression which is sent unassembled.

These cases are left to the technician from start to finish—from assemblage of impression to design, construction and finishing. If prosthetic work is one-half of the dentist's field and perhaps more than that of his income, we may say that the laboratory workers design and construct an appreciably large percentage of all major dental restorations used by the public at large.

My point is this. Dentists have expressed the fear that the laboratory worker will be permitted the privilege of working directly for the patient. Well, why shouldn't he? Surely mastery of impression-taking will require but little effort. I understand that even now certain laboratories have experts in this field only to serve the dentist who cannot obtain a satisfactory impression of the area he is attempting to restore. Where is the logic or justice in a dentist figuring up the laboratory cost of an appliance and then multiplying by four (the accepted number) and quoting this figure to the patient?

The dentist collects, say, \$160.00, sends the impression and \$40.00 to the laboratory, gets his restoration back, sets it in place and dismisses the patient. The patient has had, strictly speaking, no professional attention; he has a case handled in its entirety by a technician, and yet we have laboratory owners who say that the laboratory mechanic should never be permitted to handle patients. In fact, we are told that he does not want to.

The laboratory man knows that the average dentist would be unable to practice if the laboratories' services were removed.

The question arises—how long will all this continue? How long will public obliviousness to prosthetic work continue where our prosthetic work is shrouded in mystery and our presentation of service is not, strictly speaking, above board? Can we continue to send impressions to the laboratory and re-

ceive back the completed article, then blithely tell the patient that our service is worth four times the fee for constructing the case?

I cannot see why laboratories do not obtain legislation permitting direct work for the public, and certainly there is nothing to prevent their doing so at a later date. I can find no logical argument against such action except one—that the dentist can do such work better than the technician, excepting the dentist who cannot do it at all.

I know of no practitioner who openly discusses the relationship of the laboratory to himself, who tells anyone that nearly all of his prosthetic work, from porcelain jacket crowns to cast gold dentures, is constructed out of his sight and without his advice, and that he does not see the appliance from the time he sends the impression to the laboratory to the time when the highly polished restoration comes back. This, of course, is a form of deception—not actual brigandage, of course. The patient knows in advance what he can expect for his money, but the fact remains that there is an element of deceit in the practice.

Probably this status of affairs will not lead to immediate results, but eventually we shall have establishments doing direct work for the public. Patients will have their teeth corrected as far as operative work is involved at the dentist's office and for prosthetic restorations will go to the laboratory. Perhaps this would be analogous to having a leg amputated by a surgeon and then after healing having an artificial limb fitted at a place equipped for that particular type of work.

We probably shall see increased fees

for operative work, and this should happen. This will tend to place the dentist on a higher plane surgically and will result in dentistry earning for itself the position of a specialty of medicine. Freedom from prosthetic work will enable colleges to teach dentistry as a postgraduate course to medicine in a fraction of the four years now required.

Of course the period of transition will be painful for both technician and dentist. There will be split fees, and the profession will probably fight to the bitter end against such a move.

In a recent malpractice suit against a medical man the following was brought out:

The operator had performed numerous surgical operations, but was not licensed, having had no training except that afforded by association with hospital work. A patient discovered this fact and brought suit for malpractice. At the trial it was disclosed that the operator had performed surgery for physicians over a period of years, these operations supposedly being performed by these licensed practitioners.

These facts were aired at the trial, and numerous witnesses testified as to the defendant's ability. Here was a case of malpractice pure and simple, yet the decision was reserved until the court could determine the just course of action.

I believe that a similar course of court action could easily take place in dentistry, and, too, that a favorable court decision could be arrived at. Overnight we would have legislation favorable to technicians doing work for patients direct if they so chose.

If some laboratory were to assume the initiative in this matter and openly

construct cases for patients, some such decision as that outlined might come about. We have previously shown that laboratories now handle cases from beginning to end. What would prevent a judicial decision to the effect that these men, having been doing this work for years, were fully qualified to be known as technical dentists, or some such name, and to restore cases requiring no surgical intervention?

Courts look at professional problems, curiously enough, with a lay mind. They have a disconcerting way of failing to see the professional side of the question, hence the presence of that thorn in the side of organized dentistry—the advertiser. If dentistry cannot obtain legislation to eliminate that type of thing, I see where a technician with sufficient initiative might succeed in obtaining court action favorable to his working direct for patients.

Despite our best efforts, the public remains woefully ignorant of preventive dentistry, and people are amenable to financial separation mostly on presentation of highly polished samples of cases. It is difficult to persuade our patients that a painstaking scaling of the teeth is the best service that dentistry can do for them and is worth as much as full dentures. It is difficult because we have sold materials, we are encouraged by all agencies in contact with us to use samples and illustrated sales jargon, and probably we shall continue to do

this, to accept the easiest way out. And, too, perhaps the cheerful delegation of prophylaxis to the dental hygienist will help to establish the value of such service in the patient's mind.

Our only solution lies in the education of the public to the value of operative and preventive dentistry. I believe that we shall see the day when cases will be constructed directly by the technician. Education of our people to the value of operative, surgical and preventive dentistry will make our path a deal less painful than will the alternative of open warfare.

Cook County Trust and Savings Bank Building

EDITOR'S NOTE.—The subject of the foregoing contribution is highly controversial. The author leaves little doubt as to his beliefs. He is not alone. Dean Owre, of Columbia University Dental School, would have one dentist with an M.D. degree supervise the work (both operative and prosthetic) of ten to twelve cheaply trained dental technicians who would work directly for patients. Others, both dentists and dental technicians, have advocated various measures, all leading to the eventual legalizing of the dental technician for all forms of dental service not involving surgical interference or the use of drugs.

There are some who think that this state of affairs is sure to come. They believe it is only a matter of time. Do you believe so? If so are you reconciled to it, or are you openly and actively in favor of it, or are you openly and actively opposed to it?

Isn't it about time that the other side of this question was given careful consideration by both dentists and dental technicians and then calmly set forth in this and other dental journals, so that no one can say later that he did not realize what had been done or what was involved?—L. W. D.



Diet*

A TOPIC DISCUSSION

By SHERMAN L. DAVIS, PH.D., Indianapolis, Ind.

I hope that all of you will take an active part and exchange ideas on these questions, because some of them are quite important. It has been my experience in studying these problems in biochemistry that it is just impossible to get a perfectly uniform result, even though you proceed under the same conditions. It is true even in identical twins, fed on the same foods exactly, that the reactions to those things are not identical. So there will always be, of course, wide bases of differences of opinion, which is quite all right, but we shall probably be able to strike some average.

QUESTION No. 1

DOES THE COMPOSITION OF THE SALIVA INFLUENCE CARIES?

We might say that there are as many positive opinions on this subject as there are writers on the subject, and those opinions of course do not agree. They all cannot be right. So far as I know up to the present time, nobody is prepared to say which is right, so for your consideration I am going to give you a little something to think about.

If you take a freshly extracted tooth, one we will say under normal nutrition, cleanse it, put it in a solution of lactic acid and leave it there for thirty or sixty days, this tooth will be attacked

according to the strength or concentration of the lactic acid.

If the acid concentration is less than what we call pH_3 , this tooth will not be affected. You cannot see it under the microscope. If the concentration of the acid is more than pH_3 , that is, stronger than that, the tooth will be attacked and the speed with which it is attacked depends on the concentration. Therefore the question naturally comes up, what is the acid concentration in the saliva? I don't know, but we have made about 2600 tests. Whether or not that represents the average you must say. The result of that analysis is this:

If you were to take all the persons in this room, supposing that you all had breakfast at half past seven and that at eight o'clock we were examining the acidity of the saliva, you would all have nearly the same acidity. As a matter of fact, putting it in terms of pH , it will be something like 6.8, which is nearly neutral. Two hours after breakfast you will find that there has been a progressive increase in the acidity, and at ten o'clock your saliva will be the most acid that it will be during the forenoon. Then it will begin slowly to become less acid or more alkaline and by noon it will be about what it was at eight o'clock. When you eat your lunch, it will become acid again until about three or three-thirty. Then it will reach its maximum acidity and will slowly climb again, and just before the evening meal it will be what it was at eight o'clock in the morning. After the

* Given before the Twenty-fourth Annual Meeting of the Marquette University Dental Alumni Association, Milwaukee, Wisconsin, November 14-16, 1929. From a stenographic report.

evening meal, about half past nine, it will be most acid and by the time you retire it will decline to neutrality. It will be just around 7. The reaction of saliva at 7 never influences enamel. The most acid that your saliva ever becomes under normal conditions of living would be 5.6, but enamel is not attacked until it gets as low as 3, that is, in these glass-vessel tests. Therefore the question comes up at once, does the acidity of the saliva cause the tooth to decay? If so, there must be some factor at work other than the acidity. This acidity of the saliva is not associated with food.

You can work your jaws before a mirror, just pretending that you are making a speech, and talk to that mirror without speaking audibly and your saliva will become just as acid as if you had eaten a full meal. It is not the food, but it is the active mastication that causes the secretion of this acid. Why? We don't know. I want you to remember this: in 2600 tests the most acid saliva we ever got was 5.4; generally it is higher than that, 5.8. No acidity at 5.8 will attack a tooth, provided it has been extracted and put in a glass jar and treated with that acid. Therefore we read a lot and see pictures about the teeth decaying and saying that the acid is just simply dissolving all these teeth and they are disappearing.

I want to raise the question right now, does the so-called acid saliva do that? If so, there is one thing only for us to do, that is, make the saliva alkaline and then we will have no tooth decay.

Can you make the saliva alkaline? That experiment has been tried. One man, for instance, with a normally acid saliva was given twenty grains of soda

bicarbonate or baking soda every two hours during the day. The next day he was treated in the same way and it did not affect the saliva one bit. It raises a serious question. Does acid saliva destroy the tooth?

I want to give you another point of view and then ask for your opinions. The fluids that are in the cells of the body, including the blood, have a reaction that we call 7.2 to 7.4. That is almost as neutral as water. If for any cause I could have you eat a large baked lobster, which is very acid, and if the body did not do something, the amount of acid that is in that lobster in the course of two hours would change the reaction of your blood and the fluids of your body so that it would kill you as quickly as a cannon-ball. Take a half-dozen lemons. There is enough acid in lemons to kill you unless something happens. What happens?

The body is provided with a marvelous power of what we call buffer action, and that is due very largely to the composition of the blood. At the conclusion of this period I am going to show you some slides showing how the blood plasma circulates through a tooth. Now, mark you, a full glass of vinegar would kill you if it should go directly into your body, but by going through your stomach and giving the blood plasma an opportunity to buffer it it does no harm at all. Therefore the body can take care of acids.

Suppose I have a tooth here that is covered with albuminous plaque. Suppose you have this albuminous plaque adhering closely to the surface of the tooth. Suppose the bacillus acidophilus gets under that plaque. The bacillus acidophilus grows on that albuminous

material and forms lactic acid. What will happen? It will disintegrate your interprismatic substance. Why? Because this albuminous plaque, adhering closely to the surface of the tooth, prevents the blood plasma from coming in there and buffering that acid, but whenever the blood plasma can come through there and come in contact with that acid, there is no amount of acid that you can take in your mouth that would affect the tooth in the least, because the blood will neutralize it in fifteen seconds. That is the basis of oral hygiene. Not only will an albuminous plaque do it, but the salivary calculus which is the result of the albuminous plaque also will. Whenever you keep those albuminous plaques off, you are not going to have acid concentration in the mouth. You may have tooth decay, but that will depend on the nutritional condition. I am merely stating a point of view.

In my judgment the so-called acid wash in the mouth does not cause tooth decay, unless you have an albuminous plaque or a salivary calculus to prevent the buffer.

Tooth decay and erosion, then, are caused entirely by different agencies. It is a little bit afield, but I want to submit another point. I want to say that in my judgment salivary calculus is like the poor—it will be with us always. Why? In the saliva, as in the blood, there are two types of albumin. One of them is called serum albumin, and the other serum globulin. Serum albumin is like the white of an egg because it will dissolve in water, but serum globulin will not dissolve in water. That is why vegetables are harder to digest than meats. Serum globulin is not solu-

ble in water, in acids, or in alkalis; it is soluble only in what we call neutral salts, as, for instance, sodium chlorid and sodium sulphate and things of that sort.

When these albumins come through the salivary duct into the mouth they are both in solution, the serum albumin because it is soluble in water and the serum globulin because a little sodium sulphate is in the saliva. When it comes into the mouth, well and good, but what happens? If you take some acid into the mouth, you break this combination of serum globulin with your neutral salt. The serum globulin precipitates; that is your albuminous plaque. If you take a lot of cold water into your mouth and a strong alkaline, it will precipitate. I know of no position by which you can avoid the precipitation of this globulin in the mouth except one. The amount of globulin that comes into the mouth depends upon the quantity of food you eat, the quality of food you eat, and the rate at which you eat it. If you take the same diet on two days and on the first day gulp it down in a hurry to catch a train in ten minutes, in an hour and a half serum globulin is being deposited very rapidly in your mouth. If on the second day, instead of catching a train, you take forty-five minutes to eat, with considerable leisure, and masticate thoroughly, a very small amount of calculus will be deposited in your mouth. It does not run over a long period either, only for about an hour.

If you eat a diet that is very sparing in these so-called concentrated foods and very rich in the accessory food substances, a non-concentrated food diet, and eat it slowly, you have much

less of this globulin deposit in your mouth than if you feed on macaroni, cheese and lean meats. We are always going to have some of this serum globulin deposited in the mouth. Therefore when I teach oral hygiene I take just four things.

I was in Washington and heard a man deliver a lecture on the requirements of oral hygiene. He enumerated everything I ever heard except being a doctor of divinity. If it requires all that to keep oral hygiene, I am not eligible. This is what I teach: that we have to have these albuminous plaques kept off the teeth so that the blood can buffer these acids; that you have to have malocclusion adjustment, otherwise the tissues will degenerate; that you have to have a diet reasonably rich in the so-called accessory foods to keep the globulin precipitated by the saliva. When you have answered that, you have touched all the fundamentals of oral hygiene. What have you to say about the globulin? Are there any questions?

Question: Did I understand you to say that cavities are frequently found under the salivary calculus? I did not find it so.

Dr. Davis: The salivary calculus may have been pulled off. Bunting has shown a plaque or salivary calculus under which there is the bacillus acidophilus. You will always have a breaking down of the interprismatic spaces, and the enamel will disintegrate, and that is his point of view concerning the beginning of caries. It depends on this, and, in order to get at it, we ought to have clearly in mind what you understand by dental caries.

I am willing to give you a point of

view to think about. It is not in books, of course. I think disintegration of the enamel ought to be classified as dental erosion, and that dental caries ought to be defined as the decalcifying of the dentin. Whether or not that is your opinion, it makes no difference, but that will serve for this half-hour. I am sure that if dental caries is defined in that way, it is wholly nutritional in origin, and that the reaction of the saliva has not one thing to do with it. I am only giving you an opinion. Are there any questions?

Question: What were the four opinions concerning oral hygiene?

Dr. Davis: The oral hygiene we teach is this: (1) malocclusion will destroy the supporting tissue, either soft or hard; (2) remove or keep absent the plaques and salivary calculus in order to maintain the buffer action of the blood—that is cleanliness; (3) the use of the jaws in hard mastication; and (4) furnish nutrition to save the dentin.

QUESTION NO. 2

IS THE BACILLUS ACIDOPHILUS A CAUSATIVE FACTOR IN CARIES?

We have partly answered this question. You will please not misunderstand me if I refer to Dr. Bunting. He is a fine gentleman and is doing a splendid piece of work. Dr. Bunting may prove that he is entirely right, but every one has a right to his point of view, of course. Dr. Bunting has made this statement: "You will never have dental caries when the mouth does not contain the bacillus acidophilus, and in every case where you do have active caries you do have the bacillus acidophilus."

From those two associations one would

infer that the bacillus acidophilus is the cause of dental caries, but he says that in order to do that you must have an albuminous plaque. Why? He has never answered that question. I am answering it for him—in order to get the right acid concentration under that albuminous plaque; otherwise the buffer action of the blood will neutralize that acid and it will never produce it.

I want to give you another point of view. If the bacillus acidophilus causes dental decay, how is it that the Bulgarians as a nation have the finest teeth of any nation on the globe? Incidentally they have more centenarians five times over per population than any other nation in the world.

If you go to Gary, Indiana, and watch the laborers during the noon hour, it is not uncommon to see some of those Bulgarians and some of the others filing their teeth. That enamel is as translucent as glass or porcelain, and it is as hard, apparently, as a nail could be made. They do not have dental caries, and yet three-fourths of all the energy-producing diet is the Bulgarian buttermilk, composed chiefly of bacillus acidophilus.

Member: There may be no plaque on those teeth.

Dr. Davis: They are infected every day. It is true, the people in Armenia who live on soured milk have perfectly splendid teeth. This gentleman says they do not have albuminous plaques. I can't answer that. I can say, however, that one of the four factors in the nutrition of dentin and enamel which comes from the body and not from the mouth is to be found in that type of food, and we will come to that presently.

QUESTION No. 3

DO CEREAL DIETS INDUCE TOOTH DECAY?

Maybe I can get you to talk first.

Question: I think that by eating a lot of cereal you eliminate a lot of other things you do need and consequently cereal diets do cause tooth decay indirectly.

Dr. Davis: There is nothing in the cereal, *per se*, that will do that. It is negative. That is a good point. I can supplement that by the result of a good deal of work.

The other week over in Pennsylvania I had a class of dentists and doctors for a week on nutrition. In that class I made the statement that the use of oatmeal was prejudicial to good teeth and bones. One of the men sent an article to the Associated Press and said that I said oatmeal was not fit for anybody to eat. He is a perfectly fine gentleman, but his hearing is defective. I hope yours is not.

If we want to make a rat's tooth decay, which is a mighty difficult thing to do, we cannot do it by feeding him wheat, but it can be done by feeding him oatmeal. Why? I do not know. There is something in oatmeal that is prejudicial to calcification of bones and teeth as well. What it is I do not know, but I want to call your attention to this fact. You can remember these little things.

Let's take ourselves at an average age of twenty. Wheat is the best cereal we have. We will all agree to that. That is why people eat wheat. If they eat corn, you know very well they get pellagra. Wheat contains only .02% of calcium, and you cannot nourish

bones and teeth without calcium. Suppose you are satisfying your appetite, for instance, on bread. How much would you have to eat in order to get enough calcium to satisfy body requirements? You know how much calcium the body needs every day. If you are over twenty, it needs 15 grains every day; if you are under twenty, between ten and twenty, it needs between 30 and 45 grains every day. How much bread would you have to eat in order to get 15 grains of calcium when it contains only .02% in the original grain? I figured it out the other day, and it would be between 10 and 12 large loaves.

The experiences of a race are very much better than the opinions of any one individual. I want to submit this for your consideration. Any grain-eating nation always has dental caries and has it abundantly. Why? One reason is that it never gets an adequate amount of calcium for normal nutrition.

I should like to call your attention to a very important thing. Benedict and a lot of these other men who have studied this very carefully put the minimum physiological requirements for an adult at 15 grains and under twenty years of age at least 30 or maybe 45 grains. Will you keep this in mind? The average amount of calcium consumed by the American family over the New England States and the other states at large is seven grains, which is half of what Benedict says is the minimum physiological requirement. Why? Because we are a grain-eating nation.

Question: How does the potato come in on that?

Dr. Davis: The potato is superior to every cereal we have, even in its albu-

mins. Further than that, all cereal grains are acid in reaction in the body and potato is strongly alkaline. I commend to you the potato, either Irish or otherwise.

Question: Is rye crisp a good food?

Dr. Davis: The rye albumins are almost as good as they are in wheat. The mineral ingredients are about the same. I haven't the slightest objection to using rye or wheat. I condemn oats from the standpoint of teeth. Whole-wheat bread is better than white bread, because the bran that is taken off the wheat contains 7% calcium. When the bran is taken away, most of the calcium is gone.

Question: Is there any way of getting calcium other than through food?

Dr. Davis: There certainly is. I am going to outline that when we come to the nutrition of the dentin. Any nation consuming grains as the major article of diet always has poor bones, plenty of deformities and very defective teeth. Statistically that is true. I didn't bring the slides because I wasn't to lecture, but just have a little talk with you. I have in my room a most remarkable set of slides. I think I shall tell you about them.

In Beaumont, Texas, there is a family which has three children. Two of these children are perfectly normal, finely nourished children, with good teeth, as far as you can see, and good bones. One of them is seven and one-half years of age, maybe a little older, but the child weighs only 26 pounds, has no teeth except a few rotten snags, the legs will not go straight but stand almost at right angles, the arms are almost hopelessly deformed from fractures, and in the

chest there is so little bone that you can hardly get an x-ray of the thorax.

Before this child was born the mother had in her diet black coffee, corn bread and molasses, because the family was exceedingly poor. There was nothing in coffee to nourish teeth and bones and nothing in the corn, except a minute quantity of calcium, and nothing in the molasses except a little residue of calcium that comes from the refining. If you were to add it up, you would never get 15 grains. What is the result? The child is hopelessly deformed and the mother has no teeth; they were all gone long ago, although she is not old.

The other children were born after this first child, both of them quite normal. Indigence was the cause in the first case, but in the second case through the discovery of oil the father got plenty of money and they could afford to live as other people live, with two normal children the result.

Cereal grains cause tooth decay, not positively but negatively. I am going to give you an illustration and sum this up when we are through.

If you will go to the northern coast of Labrador and study the tribes there, you will find two very interesting situations. One of the tribes lives so far from the trading posts that have been established by the Hudson's Bay Company that they cannot go to those posts to trade because they travel in skin canoes. The limit of migration of those skin canoes is about 100 miles, so those people live on the products of the catch, very largely on fish and on raw meat. They drink the blood of the animal first after they capture it, next they consume the soft bones of the chest and all that sort of thing and the liver, and they

eat the muscles, if they have to, and some of the fat. They do not have dental caries. I might add that the women's teeth are worse than the men's teeth, for this reason: the men wear seal-skin boots, which when they get wet during the day harden at night, and it is the duty of the housewife to get up in the morning and chew those boots until they are so soft that the husband can put them on. In so doing they have worn the teeth down to apparently what was the original gum line, but there never was a case of exposed dentin.

Take their brothers living on the other side of this trading post, within a radius of 100 miles. They go down to the post and exchange their captures. What do they get? They get white flour and molasses as the chief articles of purchase. What is the result? They have dental caries galore and pyorrhea in a horrible form—the same tribe, the same climatic conditions, but a difference in food.

Anybody who is feeding energy requirements on any grain is going to have dental caries. Why? Because the inorganic materials necessary for the teeth are not there. A tooth is a mobile, labile structure. It is undergoing nutrition and destruction all the time; when these two factors reach an equilibrium, the tooth remains normal, and when they are not in equilibrium, there is a breaking down. Did I make that statement strong enough?

Question: Where do the yellow races get sufficient calcium? They are known to be great rice-eaters.

Dr. Davis: There is something interesting about rice. Although rice contains a good deal of acid as its residue, the calcium content of rice together

with the albumins in the rice are very much superior to those of the cereal grains, and the only other factor I can explain is the large amount they consume, because they depend wholly on that for their energy requirements, and that means a large amount of it.

That brings up another interesting point. I have done a good deal of thinking and studying on what is known as basal metabolism. That means the average amount of chemical action that goes on in your body. A Malayan is absolutely different from a Caucasian. He has a machine that is very much more economical than ours. Therefore, if you take a Caucasian and a Malayan of the same weight and have them do exactly the same amount of work and feed them the same amount of food, the Malayan will exceed the Caucasian anywhere from 40% to 50% in his efficiency.

QUESTION No. 4

ARE CARIES AND PYORRHEA FOUND IN THE SAME MOUTH?

To put the question otherwise, if you have progressive pyorrhea, do you have progressive caries in the same mouth? If you have active caries, do you have pyorrhea?

That is a question about which I know nothing. I am going to give you the results of two studies. The dental crisis, as you all very well know, occurs generally at the adolescent period, somewhere along about sixteen or twenty. If the metabolism is all right, youths settle down and do not have much caries, generally speaking. Pyorrhea is not a disease of youth but a disease of the adult. My only opinion is that it is

an abnormal metabolism. We have that to prove.

Do caries and pyorrhea occur in the same mouth? One of the statistical studies made on something like 2200 cases results in this: the ratio of these two is practically 1000 to 1000. The number of cases where pyorrhea is more abundant than caries or where caries is more abundant than pyorrhea is only .34%. It is a matter of the law of averages, and you can have caries and pyorrhea just as much in the same mouth, with or without. Whether or not that is true I do not know.

QUESTION No. 5

CAN RESORBED ALVEOLAR BONE BE RESTORED?

I should like to change that question and ask, may resorbed alveolar bone be restored? Then I will answer that it may be restored. The reason I say that is that I have restored alveolar bone. I have not the slides here, but I have them in my room. If any doubting Thomas will come up with me, I shall be glad to show them to him. They were made by Dr. Roy Hopkinson, your president.

These slides I refer to concern the case of a girl in whom the alveolar bone had been very largely resorbed and the mandibular bone had been so decalcified that it would not take a good x-ray. This girl was put on a nutritional treatment, which I shall outline presently.

In fourteen months the alveolar bone was restored. I am making some studies in New York as a result of work there, and if x-rays mean anything, they will mean that alveolar bone was restored. But it is a slow process. You can stop

dental caries in one month, you can heal a broken bone in six weeks, but you cannot restore an alveolar bone, in our experience, under about one year.

How do you restore alveolar bone? If malocclusion has been removed so that there is no constant irritation at that point, I shall answer that question when we come to Question No. 9. Has anybody here restored alveolar bone?

Question: What were the ages of these cases?

Dr. Davis: The oldest was thirty-four; the youngest, of course, was somewhere around twenty-one.

Question: Do you mean that the bone was made more dense or was made to grow back?

Dr. Davis: The bone was built up to its normal contour, and the x-rays will show you that. Dr. Dewey, by the way, of New York, has some studies along that line that absolutely confirm that statement.

Question: What about the periodontal membrane in those cases?

Dr. Davis: I have only the x-rays. The x-rays showed that the bone was restored. As far as the soft tissue is concerned, I cannot answer that.

QUESTION NO. 6

WHAT FACTORS INFLUENCE RESORPTION OF THE ALVEOLUS?

I do not know very much about that. There is only one that seems to be reliable, and, if you don't mind, we will put the soft pedal on there. One of the factors, of course, is malocclusion, as you all very well know. Malocclusion, setting up a constant irritation, will cause that alveolar bone to be resorbed.

In the absence of malocclusion there

is one other factor. I said a while ago that the body maintains in the neutrality of the tissues the liquid in the tissues, as well as in the blood. How does it do it? By utilizing the bases that are in the foods.

If any of you do not understand what I mean by base and acid, let me explain. The ladies all know that if you are boiling some eggs and put a silver spoon in the water, the spoon will turn black. That is because there is sulphur in the egg. When the sulphur is taken into the body, it forms sulphuric acid, the third strongest acid we have. That acid would destroy the body if the body did not neutralize the acid.

If you eat cheese, there is phosphoric acid in that, and the body must neutralize that phosphoric acid. Therefore the body reverts to all types of schemes in order to neutralize these acids that are normally in the foods. It does it by maintaining in the blood what is known as the alkali reserve.

What is that alkali reserve for? It is to neutralize acids that come in your foods, and the body cannot live without this alkali reserve. The principal alkalis that are in that reserve are potassium, sodium and calcium.

Suppose you are eating a diet that does not contain much potassium, sodium or calcium. Then the body cannot manufacture them and something has to happen. Two things happen. First, if your diet is not supporting raw material for maintaining this alkali reserve, what does the body do? It attacks the alveolar bone and begins to resorb that alveolar bone and throws it into the circulation and uses it as a means of maintaining the alkali reserve.

The other thing that happens is that

the kidneys assume another function, and the muscles are torn down and the ammonia is extracted from it. The urea is transformed into ammonia, and the ammonia neutralizes the body. From injudicious eating it will use the alveolar bone.

The only two factors that I know of, therefore, are a constant irritation from the malocclusion and a constant diet that is rich in the acid-forming salts and not in the bases.

QUESTION NO. 7

WHAT ARE THE CAUSES OF DENTAL EROSION?

Whenever that question comes up, I always feel that I should like to have on felt slippers. You know, I cannot answer that question. Can anybody?

Question: Toothbrush?

Dr. Davis: I don't believe it for one minute. Bulgarians have such good teeth that a good file will not cause dental erosion. If you are going to use the toothbrush as a causative agent, let's call it abrasion. Let's call erosion something else. Will that be all right? I believe you can abrade teeth. I don't think there is any question about that. But erosion is a very different proposition. I can't answer that, but I am going to tell you what I think about it with a little experimental evidence, not more than fifteen cases. Dental erosion is due to a progressive malnutrition of the surface of the tooth, and when we come to study dental caries I shall make that very clear. We have stopped dental erosion, I am perfectly sure.

A lady whose dentist had condemned all of her teeth because of erosion came to me. They were highly sensitive. We put her on this defensive treatment that

we use for arresting dental caries. She went away and in one year came back with the same teeth, with no further erosion and the sensitiveness all gone, and many other good things had happened to this woman. We were perfectly astonished to discover that that could be done. But just take it with a little salt, please.

I believe dental erosion, in the strict sense of the term, is due to a malnutrition of the surface of the tooth.

Question: Would that same thing hold true in cases where you have breaking down of enamel along the gum line?

Dr. Davis: Exactly.

Question: Is the erosion due to the exudate of the gingiva?

Dr. Davis: That is a question which has come up very extensively. Whether that is true I do not know. If there is some unknown chemical substance in there about which we do not know, that may be, but I do not know. But it is not due to acid, because the saliva has a very limited range of acid and alkali reaction.

Question: Is there a great deal of difference between the hardness of enamels in different nationalities?

Dr. Davis: As a nation I believe there would be, but at this minute I do not remember having ever seen any studies in which these different degrees of hardness in different nations have been worked out.

Comment: There is a table printed in G. B. Black's *Operative Dentistry*. There is a difference in hardness and softness of enamel amounting to practically nothing in individuals of the same race.

Question: What of the enamel rods?

Dr. Davis: Not in the interprismatic spaces.

Question: Dr. Black doesn't say that either.

Dr. Davis: By the way, this little round table and questions illustrate one thing very clearly, that is, that if every member of this little group went right to his secretary and told him what he thought are the causes for dental erosion, what his observations are, and let him put that on file, and then sometime later made a study of those, it would be perfectly remarkable what could be done for dentistry, if we had those common experiences filed so that we could get slants on the methods intact.

QUESTION NO. 8

IS EROSION ACCOMPANIED BY CARIES?

You can answer that much better than I. Do you have erosion without caries? (Yes.) Do you have caries without patent erosion? (Yes.) Erosion is not always accompanied by caries by any means, because they are due to two entirely different causes, as far as I see.

QUESTION NO. 9

IS DENTIN SUBJECT TO NUTRITION?

Now I am getting on more certain ground. Dentin is subject to nutrition; it is subject to metabolism, both anabolic and catabolic. You can take any person with a perfectly normal set of teeth and let me select the diet for nine months, if he is under twenty years of age, and I will guarantee that I will

wreck the teeth. I will make another boast. If you will take that same individual whose teeth are being wrecked and let me conduct the nutrition for six months, I will guarantee that I will reconstruct those teeth—not restore the organic matter, but restore the tissue that has organic matter.

Question: Couldn't you do that after twenty?

Dr. Davis: I think so. We stop dental caries in people who are thirty-five as much as we do in those who are forty-three.

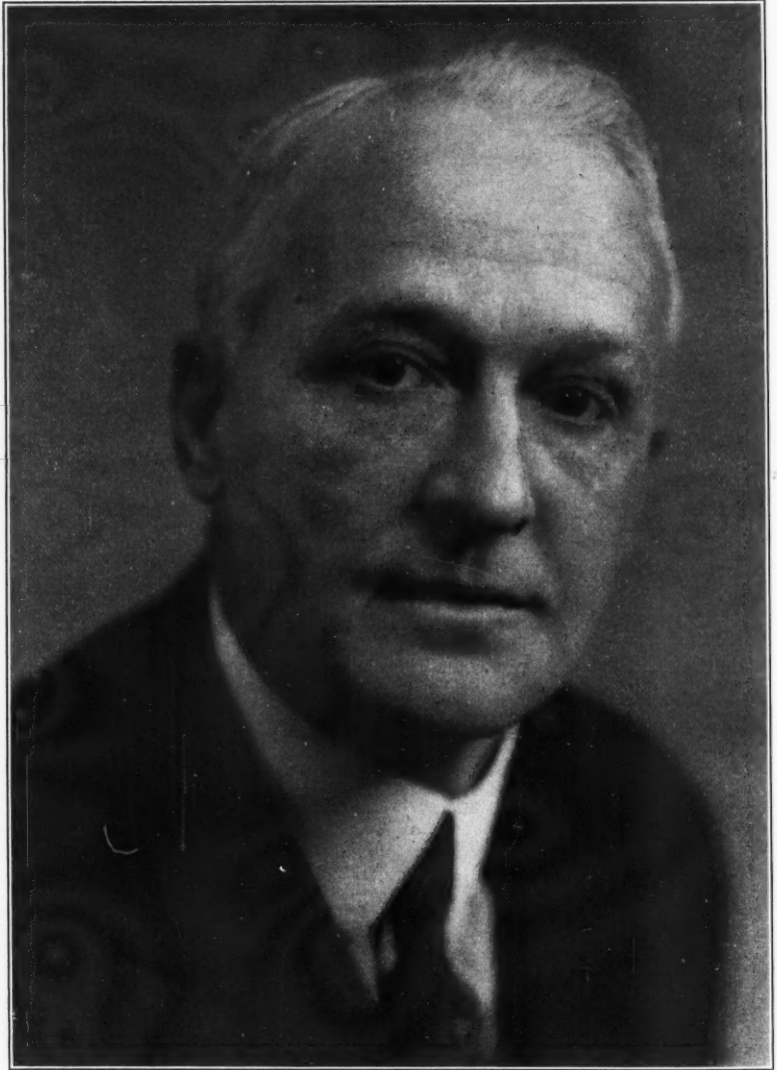
QUESTION NO. 10

HOW MAY CERVICAL DECAY BE ARRESTED?

In our dental clinic we arrest cervical cavities practically every day; that is, not in one day, but we take the cases and arrest them eventually. It is not a difficult matter to stop invasion of the cervical margins. You can use resopyrine and hexylresorcinol as a prophylaxis against the bacillus acidophilus, but that will not stop it. The whole thing comes from within. You stop it by hardening the dentin. No dentin that contains its normal calcium content is attacked by the so-called proteolytic organisms which cause tooth decay. If you can take a dentin and restore the calcium in it to normalcy, you will automatically destroy the bacteria and it will be immune to caries.

The people of Labrador have the dentin worn away completely, but there is no caries whatever. Nations prove it.





JAMES PETER RUYL, D.D.S.

1873—1930

James Peter Ruyl, D.D.S.

Dentistry lost one of its distinguished members, a family lost a devoted father, and many, including the writer, lost a dear friend when James Peter Ruyl died at his Brooklyn home on December 29, 1930, in his fifty-eighth year.

Dr. Ruyl was born in Brooklyn in 1873, received his early training in the Brooklyn schools and was graduated from the New York College of Dentistry in 1894.

He immediately began practice in Brooklyn and soon attracted the favorable attention of observant leaders in the profession by the exhibition of an unusual degree of artistic perception and manual skill.

To his technical ability he added a personality which shed luster on his profession. To many of us he was just what a professional man ought to be in appearance, manner, knowledge and skill. It is not surprising that he quickly built up a very satisfactory practice. After some years, attracted by the persistent demand for his quality of service in New York, he removed to Manhattan.

The necessity for giving expression to his artistic talents in his work led him to specialize in full denture service. He mastered every step of the technic and shortened the time required for many of them, in order that he might cope with the demands on his time. More than any other dentist of the writer's acquaintance, he used the mouth as an articulator, with the happiest results.

Perhaps no single contribution of his to progress in professional denture service is more important than the operation now generally known as alveolec-

tomy. He saw the elements of this operation in Europe, practiced it at home, developed a satisfactory technic for conservative procedure and gave it to the American profession.

In the artistry of denture restorations Dr. Ruyl stood almost alone. There are persons now wearing full dentures made by him whose families do not yet know that their teeth are not natural. Some of his happiest recollections were of persons who had been forced out of the business or social world by the appearance of their teeth and mouths whom he had been able to put back on the road to achievement and happiness by his restorations.

Dr. Ruyl was a charming companion. It was the writer's privilege to make with him very recently, by automobile, two lecture tours requiring about twenty weeks and totaling about 20,000 miles. On such trips all the frailties and disagreeable qualities in one's nature have a chance to crop out. He showed none. Not only did he wear well, but he steadily improved, and it is a pleasure to look back on the last tour as perhaps the happiest experience of his later days.

He is gone, but his influence lives. He delighted and instructed those who were fortunate enough to hear his lectures or see his clinics. There were many evidences that he opened to them new visions of professional achievements in his chosen specialty. He did before their eyes things that they did not know could be done, and they will not forget. Some of them will continue to render better service than they could have but for what he taught them. Thus, being dead, he yet serves.

GEORGE WOOD CLAPP.

Odontology and Stomatology in Soviet Russia for the Past Decade

By Prof. GEORGE RANDORF, Leningrad

SIXTH ARTICLE

CONDITIONS IN THE RUSSIAN SOCIALIST FEDERATIVE SOVIET REPUBLIC

Turning from the South to the North, we become still more impressed by the fact that the October Revolution produced a revolution in the entire status of dental work. Nationalization of private dental offices and labor mobilization of dental surgeons radically changed the whole character of the work of dental service, bringing it nearer to the masses. The main body of dentists, being redistributed, were transferred from the larger central cities to the environs. At the same time the reform of odontological education was being carried out. In Moscow it was transferred to the State Institute of Stomatology and Odontology, and in Leningrad to the Institute of Stomatology, the scientific and practical Stomatological Institute and the clinics of the very large faculty of the Medical Institute. In the North dentists were accorded the same rights as dental surgeons.

If we turn to the statistics of the year nearest to the end of the decade described, we find that at the end of 1927 there were in the R. S. F. S. R. 1881 state dental ambulatories with 2,034 dentists, of which 1,225 were located in cities (1,283 dentists) and 656 in villages (751 dentists). Besides, there were organized 101 dental prosthetic ambulatories with 248 dental technicians. In 1924 there were 2,009 dentists, of whom 234 lived in villages. At the beginning of 1924 there were

1,961 dental ambulatories (of which 103 were school prophylactic), with 2,814 dental chairs, and 218 dental prosthetic ambulatories and offices, of which 49 were independent and 169 were attached to other dental ambulatories and offices. In January, 1928, the statistics for the R. S. F. S. R. showed 3,489 state-serving dentists, of whom 1,600 were in district cities, 913 in county cities, 357 in smaller towns and 619 in villages. The state dental prosthetic branch showed considerable development in spite of the fact that private practitioners were still holding their ground, thanks to the recall of the prohibition.

Insured working men and women obtain prosthetic help free. For the rest of the population the fee is regulated by the People's Health Commissary (Dental Section). However, in cases of complicated jaw fractures the prosthetic work is done free for the laboring people at special institutions, such as the Leningrad Stomatological Institute, the stomatological branch of the Leningrad Traumatological Institute and the Moscow Prosthetic Institute. For three years (1924-1926) the number of prosthetic cases made and of artificial teeth used in the R. S. F. S. R. was as follows:

Year	No. of Prosthetic Cases	No. of Artificial Teeth
1924.....	46,813	415,371
1925.....	91,214	811,175
1926.....	129,152	1,118,413

By the end of 1927 the general number of state-serving dentists in the Union of Socialist Soviet Republics was 6,500, thus exceeding the number of all practitioners before the World War, which latter number then included not only those in Russia proper, as it would be understood now, but also those in Poland, Finland, Latvia, Estonia and Bessarabia, which formerly belonged to Russia.

Apart from the numerical increase one should bear in mind the radically changed methods of mass work, the increased attention paid to prophylaxis and the attraction of the very large number of the laboring people to the work of spreading knowledge of hygiene of the oral cavity and the teeth.

To show the difference between the old and the new, it is only necessary to mention an incident at the last odontological congress, held before the War in 1913, when a member of that congress who expressed the thought that odontological knowledge might spread among the masses of the people was stopped by a police sergeant who declared that he would close the congress if such speeches were repeated. In the revolutionary period three odontological congresses took place, the first in Moscow in 1923, the second also in Moscow in 1925, the third in Leningrad in 1928, at all of which Prof. P. G. Dauge, of Moscow, acted as chairman. Here is what is written on the title page of the *Proceedings of the First Congress*:

Motto—"In the union of labor and science is the pledge of the health of the future generations."

Dedication—"To those who are fighting for the new Soviet forms of

odontology we dedicate the present work."

And here are the central thoughts expressed by the chairman with reference to the chief aims of the first congress: "To organize the protection of the health of the people on new principles which have not been applied anywhere else in extremely hard conditions. . . . No state dentistry ever existed; the Revolution created it. . . . The dental profession suffered great losses while fighting for the preservation of the health of those who had suffered from the afflictions which visited the country, such as war, revolution, famine, epidemics, and brought great sacrifices from the members of the medical profession. But odontological thought continued to develop and now, having become an independent division equivalent to that of medicine, will no longer be in the rear of Western European odontology, but will carry the torch of dental science ahead of the rest of the world. . . . The Department of the Protection of Children's Health did not exist independently before the Revolution, it having formed an annex to the Commissariat of Public Education. . . . Our aim is to study the psychical and physical development of the child, doing it as physicians and being dentists at the same time. . . . Children's dentistry is the most important part of our duty, which must be followed by active work among adults. . . . The Dental Section of the People's Commissariat of Health has laid the foundation for the realization of the following plan: one dentist for 10,000 city inhabitants, one for 38,000 village inhabitants and one for 3,000 school

children. . . . The section spreads its nets of state dental service wider and wider, and in 1923 we purpose offering, besides school dental treatment, another form of dental help to the insured, bringing it nearer to the village population. . . . Prophylactic methods of fighting social diseases like caries must be introduced not only in school ambulatories but also in those for adults. . . . We have a large growing population which will become proletarian in the very near future, and this is the reason why we concentrate our attention upon serving that population practically, by means of school dentistry. In our work we must pay most attention to the proletariat as the leading class, especially to those engaged in professions which act injuriously upon the oral cavity."

What are the fundamental elements of Soviet odontology? According to authoritative opinion they are (1) the material and technical bases feeding the odontological institutions, (2) the available number of them, (3) the present staff of dental workers, (4) the scientific basis, (5) the directing apparatus in the center as well as in the environs, (6) professional and scientific—social organizations.

If we consider the first, i.e., the material basis, we must admit that there was an empty place to begin with at the time of the economic ruin of the country, since the preexisting source, i.e., the inventory of private dental cabinets, had been exhausted, as the state was no longer interested in it. Only toward 1923 do the records show an industrial development of the Union amid an advancing state of science and technic, together with an enormous

growth of social initiative, and as a result there was an increasing number of state dental establishments and along with it a considerable fall in imported dental materials, which meant emancipation from the West and a gradual increase of home-made production of dental supplies.

As to the staff of dental workers, the only right form of odontological education in the R. S. F. S. R. has been recognized as a complete medical course with subsequent specialization. The minimum number of graduating odontologists required for the next few years has been set at two hundred a year. For the present, however, only sixty can be graduated. Besides preparing a new staff of dental surgeons, care is also taken to obtain dental mechanics, prosthetic workers and dental assistants. Courses have been created also for the improvement of dental practitioners of the old school in cities where material and scientific conditions permit.

Scientific research has been concentrated around biologic-social problems with the aim of improving the sanitary condition of the masses. This branch constitutes the subject of social odontology. As the fundamental base for the creation of a new staff of medically educated odontologists there have been established the State Institute of Stomatology and Odontology in Moscow and the Leningrad Scientific-Practical Stomatological Institute.

The second scientific base of Soviet odontology is the chairs of stomatology and odontology at the medical institutes. The latter have as an object, besides the obligatory course of odontology for their students, to pre-

pare new scientific workers, graduating assistants, house physicians and aspirants.

The third scientific base is the chairs of odontology at the state institutes for improvement of physicians, and the fourth the exemplary polyclinics of the district health departments. The directive work of the center is now understood to mean that the rationalization of the apparatus should not be carried so far as to exclude the most competent and authoritative members of the profession. The central apparatus itself gradually loses its former significance of a state compulsory organ, giving up one function after the other to social organizations. In the words of Lenin, "The woman-cook begins to participate in the government of the country."

The central organ as well as the leading local one is being relieved of a

series of tasks which lie beyond its competence, being of a social and scientific organizational character and retaining the part of a regulating organ which cares for the execution of the clear instructions in conformity with the general line of socialist reconstruction. The aim is evidently to extend dental help to all children by the end of the five years' plan, the ever widening extension involving the laboring masses through sanitary enlightenment and hygienic education. For this purpose a central nucleus has been created at the State Institute of Stomatology (Moscow) for social hygiene, which will be in contact with the Union Society for Social Hygiene, while analogous local nuclei will be closely connected with it through ideological and organizational unity.



International Dental Federation (F. D. I.)

Chairman: Viscount de Casa Aguilar, Madrid

Secretary: Geo. Villain, Paris

Treasurer: A. L. T. C. van Hasselt, The Hague

International Congress-Exposition of Dental Hygiene, Brussels, August 7-15, 1930

HYGIENE COMMISSION

The purpose of the following is an explanation for the dental profession of the aim and method of operation of the Hygiene Commission of the International Dental Federation (F. D. I.).

The Hygiene Commission particularly covers the field of study of:

- (1) Mouth-hygiene conditions in the various countries.
- (2) The influence of mouth and tooth diseases on health conditions at large.
- (3) The means of improving mouth-hygiene conditions:
 - (a) By introduction and propaganda of dental care before, during and after compulsory school age, for the purpose of improving mouth conditions.
 - (b) By promoting dental care and mouth hygiene among the mass of the people (adults), who, due to their social economic position, are deprived of this benefit.
 - (c) By inquiring into how diseases of teeth and mouth can be prevented.

The Hygiene Commission therefore approaches the national committees affiliated with the F. D. I. for the purpose of collecting and getting acquainted with the most recent results of mouth-hygiene provisions and dental

care as well as of precautions used in any country.

The Hygiene Commission sends inquiries to many countries and is thus able, by virtue of reports received, to spread information in the domain of mouth hygiene and dental care. This information bears not only on the installation of but also on the most economic application of the dental provisions for school children and adults (e. g., estimates of cost).

Furthermore, mention is made of the fact that during the annual session at Utrecht it was resolved that the Hygiene Commission should collect and widely spread all means of enlightening the nations about mouth hygiene and dental care, so as to bring about appreciation of effective dental care as a necessity by advancement and organization of yearly exhibits.

In this way the Hygiene Commission promotes mouth-hygiene propaganda in all countries, organizes mouth-hygiene exhibits on as many occasions as possible during annual sessions of the F. D. I. in countries where the latter are being held, for instruction of the people, and further urges to the largest possible extent the holding of these exhibits in countries affiliated with the F. D. I. The Hygiene Commission endeavors to compose a permanent collection as complete as possible.

The Hygiene Commission considers it its duty to inquire scientifically and

socially into the causes of diseases and the means for preventing or combating them.

The Hygiene Commission has the following three subcommissions:

- (1) The subcommission for dental care of children.
 - (a) Infants.
 - (b) School children.
 - (c) Children above school age.
- (2) The subcommission for public dental care (adults).
- (3) The subcommission for mouth-hygiene investigations and International Mouth-Hygiene Institute.

These subcommissions are engaged at the present time on problems of mouth hygiene. The International Institute of Mouth Hygiene is affiliated with this commission.

The efforts of the commission have not been unsuccessful. Already, under Prof. Jessen's leadership, the Hygiene Commission is arousing interest in dental care in many countries. Particularly, dental care has been introduced on a large scale by constantly carrying propaganda to numerous countries.

Since 1925 the Hygiene Commission has entered into relation with the Hygiene Committee of the League of Nations, through the intermediary of their Honorary President, Dr. N. M. Josephus Jitta, delegate of said Hygiene Committee of the League of Nations, which relation has been continued later on by a delegation of the Red Cross Commission, with the result that the Hygiene Committee of the League of Nations during their session on March 5-8, 1930, adopted the following resolution:

The Health Committee, realizing the impor-

tance of maintaining efforts against dental diseases as vigorously as against other diseases, expresses its desire to be kept informed of the work of the International Dental Federation.

The Executive Council in the F. D. I.'s session at Brussels in 1930 charged the presidents of the Commission for External Relations (late Red Cross Commission) and of the Hygiene Commission (F. D. I.), together, to keep those relations up in the future.

We are confident that in this way governments of countries affiliated with the League of Nations will give more consideration to the aims of the Hygiene Commission of the International Dental Federation, than they have up to the present time.

COMMISSION IN CONNECTION WITH THE RED CROSS

The commission which took charge of the relations with the Red Cross was organized immediately after the War. This commission is the connecting link between the international organizations and one of the most important commissions of the F. D. I., the Hygiene Commission.

At Copenhagen, in 1927, the question was put to decide whether the Commission in Connection with the Red Cross should be united to the Hygiene Commission, and after an important discussion, in which Dr. Watry, of Antwerp, pleaded for autonomy, the two commissions worked separately but in excellent collaboration.

The representatives of the F. D. I. rapidly obtained tangible results (if we consider the slowness of the discussion). To quote but one, the Hygiene Committee of the League of Nations has decided to sustain morally the aim pursued by the F. D. I. The Hygiene

Committee has decreed that oral sepsis should be combated as energetically as other illness and has asked that all the works of the F. D. I. should be communicated to them.

The kindness with which our Commission was met in Paris by Dr. Humbert, Director of the League of the Red Cross, allows us to hope that the National Committee of the Red Cross will always be more and more interested in hygiene and oral prophylaxis. The Polish Red Cross, which has created five dental offices, ought to be an example to be followed by the other national organizations of the Red Cross.

We could say much more on the necessity of giving more intensity to the action of the Commission in Connection with the Red Cross and the international organizations. The reader who is interested can consult the work published in the Annual Report of the

F. D. I., 1930, page 170, on *The Red Cross, Its Relations with Oral Hygiene*.

We hope that the help of several colleagues in all the different nations will permit the Commission in Connection with the Red Cross to accomplish its task.

At the session in Brussels, 1930, the Executive Council decided to give in charge of that commission the relations with the Red Cross and all the other international organizations: Hygiene Section of the League of Nations, International Labor Office, Confederation of the Intellectual Workers. Important decisions have already been obtained.

René Jaccard, Geneva

Colleagues, visit the Eighth International Dental Congress at Paris in August, 1931!

New York College of Dentistry Class of 1911

Thirty-two members of the class of 1911, New York College of Dentistry, met at the College on Tuesday, January 6, 1931, and founded a permanent organization. A committee was appointed, with Morris Ecker as Chairman, to make arrangements for a Twentieth Anniversary and Reunion

Celebration during the latter part of April. The following officers were elected:

Benjamin Shapiro, *President*
Frederick Lutz, *Vice-President*
S. H. Filler, *Secretary-Treasurer*
37-43 90th St., Jackson Heights,
N. Y.



DIGESTS

DENTAL INFECTIONS AND THEIR RELATIONS TO SYSTEMIC DISEASE

By HARRY A. GOLDBERG, D.D.S.

In cases of chronic infection the teeth, gums and sinuses should be eliminated as possible sources of infection. In such cases the author secures from the physician a thorough medical history and data on blood-pressure, blood count, Wassermann reaction and urinalysis. He then makes a thorough clinical examination of the teeth, gums and sinuses and an x-ray examination of the teeth and sinuses. He procures as accurately as possible the date when each treated tooth was filled or crowned. There is a definite period between the time when a tooth becomes infected and the first systemic symptoms appear. This varies, depending on individual resistance and immunity.

A dentist can gain experience in this work only by becoming affiliated with a hospital. Cooperation between the physician and the dentist is indispensable, and every hospital should have a dental department and at least one dental intern. The dentist should make the rounds with the attending physician.

The author condemns the wholesale extraction of teeth and believes that, if this is necessary, dentistry has retrogressed. Pulpless teeth that are properly sterilized and filled do not, as a rule, become infected. X-rays do not

always show pathological conditions and should be used only as an aid in diagnosis.—*The Dental Magazine and Oral Topics*, November, 1930.

NEOPLASTIC PATHOLOGY OF THE ORAL CAVITY

By ALBERT SOILAND, M.D., F.A.C.R.,
D.M.R.E. (Camb.)

Despite its accessible location the difficulty in recognizing and treating intra-oral cancer is well known. Inflammatory processes sometimes hide the malignancy and favor an early spread to the regional lymph nodes.

Inherited susceptibility and continued irritation play important parts in the etiology of cancer, and trauma may be considered a direct cause. At the Cancer Hospital in London it was found that 93% of all cancers of the tongue were associated with syphilis.

The treatment of intra-oral cancer is not standardized. Surgery is the method of choice in many clinics. At the Mayo Clinic it is customary to excise the lesion and, after a pre-operative irradiation of the regional lymph nodes in the neck, to do a block dissection. At some hospitals radium implants are used, followed by high-voltage x-ray. Results are being obtained by electro-coagulation.

In the majority of cases the responsibility for an early and correct diagnosis of oral cancer lies with the dental profession. Any new growth that does not

disappear in a reasonably short time should be regarded with suspicion. Every such growth is a potential cancer and should be destroyed.—*The Pacific Dental Gazette*, November, 1930.

FACIAL AND TRIFACIAL NEURALGIA

By GASTON LABAT, M.D.

Trifacial neuralgia is diagnosed by three characteristics, the suddenness of the attack, the severity of the pain and the brevity of the attack. Between the attacks there is a period of absolute calm. The diagnosis is confirmed by the presence of trigger zones, especially if these bear any relation to the superficial distribution of any of the branches of the trigeminal nerve.

The pain must be analyzed from the standpoint of nerve distribution, so as to render the diagnosis of the responsible nerve or nerves correct.

The technic of alcohol nerve-block is easy and safe, but the operator must possess a knowledge of anatomy, clear visualization of the structures involved and familiarity with the details of the technic. The Gasserian ganglion block should be used only in extreme cases involving the ophthalmic division of the trifacial nerve.

In most cases one injection gives relief for many years.—*Bulletin of The First District Dental Society* (New York), December, 1930.

EFFECTS OF IRRADIATION

By CHARLES SHEARD, Ph.D., Sc.D.

The author believes that light rich in ultra-violet radiation of sufficient quan-

tity and proper spectral character may be used in dentistry as an accessory agent in inducing and maintaining normal calcium and phosphorus metabolism so that normal calcification may take place. It is a germicidal agent, since its bactericidal action has been reported by many investigators. It brings an increased flow of blood to an area and is an analgesic agent in both superficial and deep structures. It may increase the number of red and white blood cells and also the percentage of hemoglobin. It tends to establish normality of function and to combat unphysiologic environment and a tendency to certain pathologic conditions.—*The Journal of the American Dental Association*, December, 1930.

SIGNIFICANCE OF ENDOCRIN AND VITAMIN DEFICIENCIES

By HANS H. REESE, M.D.

The author states that, in his opinion, dental caries and malformations are not separate diseases but merely symptoms of a complicated syndrome, and that healthy teeth may be obtained by a scientific diet that should start with the expectant mother and continue through infancy and childhood.

Even alimentary disturbances of short duration, caused by disease or faulty diet, will produce disturbances in ossification and result in permanent defects in the enamel and dentin, together with malformation of the alveolar process. Illness and metabolic disturbances in the expectant mother affect the developing crowns of the deciduous teeth and temporarily paralyze the activity of the odontoblasts.

A well-balanced body, harmonious

function of the endocrin glands, a correct diet and modern dental hygiene are necessary for the development and

maintenance of healthy teeth.—*The Journal of the American Dental Association*, December, 1930.

Foreign Dental Literature

Edited by JOHN JACOB POSNER, LL.B., D.D.S., New York, N. Y.

FAILURE IN MANDIBULAR ANESTHESIA EXPLAINED

By DR. A. BRUNETTI, Bologna, Italy

In the author's experience he has found that anesthesia of the long buccal nerve presents signs similar to those in anesthesia of the mandibular nerve and explains how this is brought about. Three cases are described. In the first a thirty-year-old patient was injected in order to remove the mandibular six-year molar. A straight-line mandibular injection was made, the needle being inserted directly through the soft tissues to the sulcus. Two c.c. of tutocain suprarenin was employed. The injection was made a little higher than usual in this instance, and the same height was selected in the two succeeding cases. After ten minutes the patient was sent into the extraction room, as the lip was already numb. The tooth was nevertheless sensitive to tapping. A systematic examination for anesthesia was made. There was reduced sensibility of a portion of the lip, especially near the corner of the mouth. There was anesthesia of the outer skin of the lower portions of the cheek as well as of the mucous membrane in the vestibule of the mouth, in the region of 4, 5 and 6. There was a continued sensitiveness of the remaining alveolar mucosa, which

showed lack of anesthesia with the exception of the long buccal nerve areas. After a second mandibular injection complete anesthesia followed and the tooth was painlessly extracted.

In the second case, that of a seventeen-year-old girl, there was tingling of the lip in the region of the corner of the mouth, but the anesthesia was limited to the teeth anteriorly and there was absence of anesthesia about the molars.

In the third case a fourteen-year-old girl had anesthesia at the corner of the mouth and of the mucous membrane anterior to the first molar. There was pain in the second-molar area. Upon an attempt at extraction pain was felt. Following a second mandibular injection the tooth was removed with no trouble.

It is the experience of many operators that incomplete anesthesia may exist in spite of the presence of numbness at the corner of the mouth and lip. The fact that patients have complained of pain in these cases has been attributed to hysteria. The author believes that pain was really present and due to failure of the anesthesia of the mandibular nerve itself, although the long buccal nerve may have been anesthetized.

There is a series of cases described by Stohsel, and referred to by the

author, wherein pain was definitely present during operation in spite of numbness of lip and tongue. Continued sensitivity is encountered also in dentin despite mandibular injection.

The first question encountered is as to how the anesthetic solution reaches the long buccal nerve. The nerve comes down between the external pterygoid and temporal attachments, crosses the coronoid process and reaches the outside of the buccinator muscle. The lower portion of the divided buccinator nerve goes to the cheeks and mucous membrane of the mandible up to the corner of the mouth. The author quotes Sicher to the effect that a conduction anesthesia of the long buccal nerve, known also as the buccinator nerve, may reach the corner of the mouth. It must not be confused with anesthesia of the corner of the mouth produced by a successful mandibular injection. In the latter instance the anesthesia continues up to the median line, but not so with the long buccal nerve. Anesthesia of either nerve will give a numb feeling at the corner of the mouth. An injection which is made too high will fail to give mandibular anesthesia, but will reach the long buccal nerve and present confusing symptoms. Sometimes, too, the patient may open the mouth too wide, after an injection has begun, and thereby carry the solution into the neighborhood of the long buccal nerve.

In conclusion the author stresses the need to bear in mind that numbness at the corner of the mouth may be the result of long buccal anesthesia, and that the inferior dental nerve may still be unaffected.—*Zahnärztliche Rundschau*, November 2, 1930.

REPORT OF DENTISTRY IN GERMANY

By DR. JULIUS MISCH, Berlin

In the field of local anesthesia it must be kept in mind that there is always the possibility of death following injection of a local anesthetic. This is true in those cases where the patient has status lymphaticus. In these instances it does not necessarily mean that the patient has an enlarged thymus gland, as the condition may exist where there is no apparent change in its size. The thymus may cause death by pressure on the trachea. More recently status lymphaticus is considered to be a hyperplasia of the lymphatic system and the lymphatic organs from some unknown cause. There is a close relationship between the endocrin glands and the vegetative nervous system; a slight injury or irritation may be enough to set up the chain of consequences causing sudden death. This cause might be the injection of novocain. It is of great importance also in local anesthesia to keep the needle away from infected areas. A case reported by the writer tells of how death followed an extraction. Everything appeared normal, yet three days later there was difficulty on swallowing, and the throat was swollen. An incision was made intra-orally and extra-orally into the swelling on the floor of the mouth, but to no avail. Three hours later death ensued from edema of the glottis.

A clear diagnosis of the patient's condition is of vast importance before anything is done. It regulates the choice of anesthetic and method of procedure. Infiltration is contra-indicated when a large swollen area is involved. Either

conduction anesthesia or a general anesthetic is safest.

Conservative dentistry is more often performed with greater efficiency under a local anesthetic, and in some quarters it was feared that injury to the peridental membrane might result. A series of experiments was carried out, and it is definitely shown that no deleterious effect on the peridental membrane follows the use of a local anesthetic.

Following the injection it is important that the patient be kept under observation. A case is cited wherein a patient who had been injected was left unattended and, becoming dizzy, fell to the floor and suffered a dislocated arm.

Care must be exercised in the use of radiation for the treatment of various conditions, as cases still occur in which patients have suffered severe burns and other injury. It is especially important to exercise extreme care in the exposure of bone in young people to the x-ray. Harm may come subsequently in atrophic changes in the character of the bone. It is necessary to cut down the time of exposure and increase the interval between treatments. Blond people are more susceptible to the radiation. Different parts of the body show varying response to the rays. The neck is more easily affected than the face. It has been shown also that the fetus may be injured if the mother is exposed to radiation during pregnancy.

The breaking of nerve broaches, smooth or barbed, is not an uncommon occurrence, and the dentist is not to be held legally responsible merely because it happened. There are many causes of breakage, aside of course from deliberate and careless negligence on the dentist's part. The broach may have

been of defective material, it may have been repeatedly used and become weakened, it may have been flamed or brought into contact with corroding acids, it may have been caught in an attempt to follow a tortuous canal. These situations invite breakage of the broach, and often it is impossible to effect its removal. A radiograph should be taken to indicate the position of the fragment. It is often left with safety in the body of the canal, but if it protrudes through the apex, steps to remove it should be instituted and failure to do so might be considered negligent practice.

Inferior metals are sometimes used in the mouth in the making of dentures, sometimes fraudulently. These may result in injury to the patient. At other times fillings of silver and gold in the same mouth may set up electrical currents which may be the source of fugitive pain. A galvanometer will show the presence of an electrical current if one end is placed upon a silver or gold filling and the other on a gold crown. More recently stainless steel has been used in the making of dentures, and the presence of such a current is greatly intensified when one end of the contact is made with such a denture. There may be interference with the salivary secretions or with digestion in the presence of these currents of electricity.

Many cases of hidden identity have recently come to light through the recognition of the teeth of the individual. A case reported in Vienna describes the finding of a young woman in a public park with a bullet wound through the heart. She was kept in the morgue for almost a year until it was decided to examine her teeth as a possi-

ble clue to her identity. A bridge was in position, which in time was recognized by a dentist as his work. Identification followed and the authorities were enabled to seize the person suspected of the murder.

In another case the remains of a body were found in the mud of a shallow grave. There were nine teeth, part of a jaw-bone, a pair of spectacles, a few gold coins, laced shoes, a set of keys and a centimeter ruler. The jaw-bone was in a rather crumbled condition. The third molar was not entirely erupted. The quality of the fillings in the teeth obviated the possibility of poor dentistry. The story, put together, showed the remains to be those of a young man of seventeen or thereabouts, of good family, buried some twenty years or more, evidently a student. Examination of the police records of missing persons revealed that, twenty years before, a young man of wealthy parents in the neighborhood had suddenly disappeared from home, and, furthermore, the records of the dentist who had treated the boy were found to correspond with the fillings in the mouth.—*Die Fortschritte der Zahnheilkunde*, December, 1930.

REFORMING THE ALVEOLAR RIDGE FOR BETTER RETEN- TION OF DENTURES

By PROF. HANS PICHLER and DR. RICHARD
TRAUNER, Vienna

The authors describe various cases showing how the retention of dentures may be made more secure by the reshaping of the alveolar ridges through surgery. As the result of disease or

gunshot wounds the alveolar ridges may be wholly or partly destroyed or obliterated. Then, again, soft tissue may have grown over the ridge, and muscle attachments may be fastened upon the top of the ridge, interfering with the proper retention of dentures.

The authors describe in detail the various incisions and surgery to be followed in making available new surfaces to hold prosthetic pieces. Thiersch grafts are taken from the arm to cover the denuded portion of the ridge. The taking of a Thiersch graft consists of a simple procedure. The skin of the inner side of the upper or lower arm is shaved and painted with a thin lysol solution. In women the graft can be taken from the hip. A section of the skin is then anesthetized and a slice removed and carried to the exposed surface. The graft adheres well and must be carefully placed. The compound is put in position and carefully allowed to remain undisturbed for ten days. The authors have seen cases of good attachment after three days. After ten days there is a fine epithelial covering. Instead of using a piece of compound to hold the graft in position, another method is suggested. The mandibular denture is constructed and into the bottom of it a piece of wire is fastened. This is covered with a piece of warmed modeling compound, is then put into position after the surgery has been performed, and trimmed to fit the newly acquired space smoothly. The Thiersch graft is then placed over the modeling compound now attached to the denture and is carried to place. The graft is thereby held nicely in position for healing.

Of special importance is the method

of securing better adaptation of poorly fitting dentures by reforming the alveolar ridge. In these mandibular cases the appliance will not hold well, because the ridge is small or because the pressure of the denture on this restricted area is painful. It is increasingly difficult to correct such a condition in very old people, where the jaws have undergone atrophic changes. The most favorable cases are those where soft tissues and muscular attachments prevent the proper seating of the denture. In the making of a new ridge it is not good practice merely to denude the bone by cutting the attachments and allow granulation to make a new covering. It should be covered with epithelium. There is little shrinkage, but it is always advisable to make the ridge a little higher than the finally desired result. Often there are large folds of loose tissue overgrowing the ridge,

which may be removed, preserving the mucous membrane, which can be brought down to cover the exposed surface of the bone.

The danger of necrosis of the flap must always be borne in mind. The best covering for the bone is the mucous membrane in direct contact with it. Should this become necrosed, a Thiersch graft may be resorted to. The advisability of utilizing the mucous membrane is indicated for those patients who do not wish to undergo the inconvenience of a graft.

In conclusion the authors state that the purpose of the plastic surgery regarding ridges is to make a place which will retain a denture. It is fundamental that the idea is to cover the bone with epithelium with no underlying submucosa. The ridge is then immovable. —*Die Zeitschrift für Stomatologie*, Vol. 8, 1930.





DENTAL ECONOMICS

Our Profession and Business from a New Angle

By RUSSELL W. FORCE, D.D.S., Pasadena, Calif.

I should like to call attention to the greatest asset in our professional and business lives, which, unfortunately, is overlooked by the vast majority of dentists. The dental manufacturers, especially in late years, are spending thousands of dollars to help us use their materials in the most proficient manner, giving clinics and personal instruction all over the country. Those making equipment are doing the same, instructing us in such small things as the proper use of the dental chair, a rather small matter but, after all, of immense value and benefit to both our patients and ourselves. In every magazine are articles dealing with dental economics and advertisements of different courses and systems by which we as dentists can put our practices on a sound, common-sense business basis.

At every convention and society meeting we are constantly learning new methods, new materials and better ways of really doing our chosen work. But are we not overlooking the best help of all? I refer to our dental nurse or assistant. These two generally accepted terms imply different duties. In thinking of her as a dental nurse, leave out the "dental" and think of her duties as a nurse or a woman who can allay fear and put the patient at ease, talk to her as a friend, making the patient feel

that her problems are the nurse's first interest; do little personal things for her, such as helping in the removal of her wraps and doing many other things that only a woman can do or would think of doing. Then, carrying the nurse idea further, comes the need for sterilization, cleanliness and order in the operating room. All of these duties most of our dental nurses do perform and are expected to do very well, but how about the other term, "dental assistant"? Let us also eliminate the "dental" from this term and see whether or not we are really using her as an assistant or real office manager, for that is what she should be if we are to receive the greatest benefit from her services.

It seems to me that dental practice should be divided into two distinct parts or phases. One of these is the actual dental operation, naturally carried to completion by the operator himself. The other phase of the practice, I think, is just as important, or even more so. For want of a better term, let us call this the business part. This business side, if properly analyzed or managed, will take much of the "dent" out of dentistry.

Is it not a fact that the large manufacturing concerns are employing women to write their advertisements for

women? Why? Because a woman understands a woman's psychology; she can get under her skin, as it were, and find out many little personal idiosyncrasies that would be of immense help to us as operators. Are we taking advantage of these facts? Do we let our assistant meet the patient, seat her in the chair and fill out the patient's card, name, address, telephone number and other data required? If we do these things ourselves, are we not missing a chance to get our assistant and our patient better acquainted? You may wonder why this would be of any importance, but the better the assistant is able to judge the patient, the better she will be able to make the charges later.

Also, the patient may be in such a mental or physical condition that a short appointment would be advisable and greatly appreciated. You know that a patient would be much more likely to tell the assistant or the assistant to judge such conditions than we ourselves. After all, we as dentists are more apt to be thinking of our actual operating than of the patient's mental attitude. However, if it is brought to our attention, we shall be more likely to show more consideration and so make a friend as well as a patient.

Along this same line an able assistant can judge a patient's social standing or, in plain words, paying ability better than we. Patients tell us the hard-luck story, but to the assistant they are very apt to tell of the great bargain they got in a new fur coat, "Only two hundred and fifty dollars." This is one reason why the assistant should make out the charts and also the charges.

Every one nowadays realizes that

there must be a scientific basis for judging office costs, and if this is done correctly, your assistant can very readily figure the minimum charge for all operations, adding to that the charge best fitted for the individual patient. To repeat—I have found that an assistant can do this much better than the average dentist and so should have full charge of the books.

As the old saying goes, "Two heads are better than one." This being true, is it not also a fact that an assistant is able to and should be encouraged to give her operator hints as to his personal idiosyncrasies or mannerisms that possibly may be annoying to a patient, and of which he has no knowledge? Also, a woman, with her position at heart, is able to make suggestions as to the office procedure that we as dentists and men would overlook. Remember that it is the little things and little attentions that lend the atmosphere to the office and make the patient enthusiastic. In other words, it would seem best to put your office nurse or assistant in the position where she is in reality the office manager.

Why do all men prominent in the different sports have managers? Merely to see that their interests are protected, to arrange matches or games and generally to relieve their minds of all minor details, leaving them free for their match; or, as in our case, removing all details of office management, bills, etc., from our shoulders, leaving us free to do our best for every patient.

If you have a very busy practice, is it not better to have a laboratory man and save your nurse's time for such things as the x-ray, ultra-violet ray and general office routine than to take her

time away from the most important position she can fill, that of office manager? If you are not especially busy, your nurse can be of great help in sending out prophylaxis notices and doing the hundred and one things that will eventually show their results in an in-

creased practice. We admit that when your assistant does the laboratory work she is helping you, but do you not think that her main work and principal value, to you, is in her ability as office manager?

601 First Trust Building

Is Dentistry a "Whole" Profession?*

By GEORGE WOOD CLAPP, D.D.S., New York, N. Y.

The author receives a letter which says that dentistry is a "whole" profession, and he takes the liberty of subjecting this statement to a little elementary analysis.

It sometimes happens that the same mail brings statements upon opposite sides of a question which fit together like hand and glove. Such a thing occurred a few days ago. First came your letter in which you gave great force to two sentences, one of which reads as follows: "Dentistry, as it is practiced today, is one of the learned professions, is a **WHOLE** profession (the capital letters are yours and probably mean that it is independent of all other professions), and nothing but a profession from beginning to end."

I am glad you wrote "as it is practiced today," because that takes the study out of the field of abstract and impracticable things and puts it on the plane of practicable things which thousands of dentists are doing daily for those whom they serve.

Underneath your letter in that mail was one from a famous professor who has spent many years trying to make dentistry just what you say it is. He

writes, concerning some distinctions to which I shall call your attention: "Until the average dentist makes these distinctions for himself and has them clearly fixed in his mind, we shall continue to have the same type of practice that is being carried on by most men today—repair, repair, repair—for the reason that dentists will be waiting for something to go wrong instead of trying to anticipate it in the mouths of their patients." Evidently he does not think that dentistry is quite so much of a profession as you say it is.

WHO IS TO BLAME?

For many years I have been trying to help three groups of dentists solve their problems: (1) those with insufficient practice, (2) those with unprofitable practice, and (3) those with too much practice. At first I thought that the blame for the insufficient and unprofitable practices lay with the public, that people did not realize the value of dental service and would not pay for it, but the more practices I studied and the more minutely I studied them, the

* This is the second of a series of related articles, the first of which appeared in the January issue of THE DENTAL DIGEST.

more I saw that the blame was forced back upon the dentist himself. And now when a dentist complains of insufficient or unprofitable practice I feel like leading him up to a mirror and saying: "You probably see there the active cause of all your trouble. When you correct the chap whose reflection that is, the greater part of your trouble will disappear."

The serious fault with most dentists is not lack of ambition or effort; it is a lack of clear thinking at the very foundation of their lives. Nobody ever took them back to their working fundamentals, and it never occurred to them to go back for themselves.

A DIPLOMA AS A DOOR TO A LARGER LIFE

If these dentists were starting an automobile tour, especially where some of the going might be rough, they would get maps and the reason for taking this road or that. They did a little planning in the preparatory period of their lives, chose dentistry as a vocation, selected a college and got instruction and a diploma. The diploma seemed to most of them a destination in life instead of the door to a larger life, and from that time on they stopped thinking about fundamentals and thought only about details or took the road of least resistance. They filled and extracted and replaced teeth as opportunity offered, and they tried to get more teeth to fill or extract or replace or more money for doing it. For most of them more damaged teeth or more money for repairing damage became the rainbow and pot of gold at the end of a life of work.

The rough going which the average

dentist experiences much of his way and the unsatisfactory termini at which most dentists arrive are neither necessary nor desirable. The best way to avoid them is not merely by higher fees or longer hours of work. They are to be avoided, first of all, by going back to the a-b-c's of our careers and doing some plain thinking about fundamentals so simple and basic that most of us either do not know they are there or take them for granted. We shall make some of the most important discoveries of our lives by means of that thinking. And so, when I mentally lead a man up to a mirror and suggest that he correct the fellow he sees there, I want him first of all to correct his fundamental conceptions of his profession as a profession, an art and a business, of himself as its servant and of the opportunities it offers.

"GETTING SOMEWHERE"

Every once in a while some one to whom I suggest such correction says: "But that doesn't get you anywhere." Of course it doesn't, if by "getting somewhere" you mean only visible motion. Neither does a map or a signpost or an electric light, but they all help you to your desired destination and by the most desirable route. The thoughts I want you to think will not of themselves "get you anywhere," and if you must have action every minute to be happy, I suggest that you skip the rest of these letters. But an understanding of these things has changed many a dentist's conception of dentistry and has helped him to set his feet on the pathway to such success as he never even visualized before.

WHO MADE A PROFESSION POSSIBLE?

If dentistry is the learned profession you assert it to be, it is because those who practice it are the spiritual and mental descendants of those men who have fought so long and valiantly against the ills to which flesh is heir and have achieved a notable degree of success.

I tried to show you, in my last letter, that the activities characteristic of those men could be divided, for purposes of study, into three groups, as follows: (1) they diagnosed the trouble and sought ways of avoidance and cure; (2) they taught sufferers to do for themselves necessary things that nobody else could do for them; and (3) when self-help was insufficient, they rendered personal service by practicing the healing art. Just to the extent to which dentists are doing *all* these things is dentistry a learned profession. To the extent to which dentists confine themselves to the repair of damage already beyond self-repair is dentistry merely an art.

There can be no sharp dividing line between the profession and the art, so that you can say, "All to the right of this line is profession, and all to the left of it is art." Perhaps neither is superior to the other; each is essential in its place. In the best form of interaction the art is told what to do by the profession, the manner of doing is more or less influenced by professional knowledge, and the results are checked by their suitability to the professional requirements.

An outstanding difference between the profession and the art probably is that their objectives are different, as

we can see by studying the meaning of the three words, *correct*, *cure*, *repair*. You will find that these three words will set forth our objectives, our procedure and our status so clearly that none of them can ever again be in doubt.

WHAT "TO CORRECT" OUGHT TO MEAN TO US

No small dictionary with which I am familiar sets forth clearly enough for us the difference in the meanings of these words, and even the big dictionary is not sufficiently complete for our special purposes. We shall have to do a little work for ourselves.

The verb *correct* means to "make right or straight or improve by pointing out errors and bringing into accordance with some standard." The illustrations given in the dictionary deal only with inanimate things, while we must deal with living things.

It is evident that you cannot effect the most desirable form of correction for the ills of the human body by the continuous application of physical force. True correction must finally come from within the body. I can think of only one thing that dentistry can correct, in the proper sense of the word, by the application of such force, that is, the alignment of the teeth and consequently their occlusion and articulation. That may be done by orthodontia or by grinding. The dentist can sometimes by moral force persuade patients to correct habits which lead to disease.

The dentist who wishes to entrench himself in the lives of those whom he serves, so that they become practice-builders for him and remain with him as long as he desires to work, becomes

a teacher of correct habits of living. The clearer his perception of his own interests, the better teacher he makes of himself. The success of his operations and his patients' conceptions of his services as an economy which they cannot afford to miss depend quite as much on his success as a teacher as upon anything he does in the mouth.

WHAT WE SHOULD UNDERSTAND BY "TO CURE"

The dictionary definition of the verb *cure* is, for us, apparently even more incomplete than was the definition of *correct*. The verb *cure* means merely to "take care of, restore to health."

The road to a cure lies in the correction of habits which led to the disease, and the hope of cure rests in the reserve strength which the body stores up through right living.

Suppose that you are ill and the doctor comes. He counts your pulse, takes your temperature, looks at your tongue and asks some questions. Is he anxious about the kind of disease you have? Somewhat. He wants to know what he has to fight, and how dangerous it is. But if he is up to the minute, he is as keen to learn what kind of patient the disease has as what disease the patient has. He wants to know what physical reserves you have accumulated, and how best he may call on them.

Is the cure for your illness in his little black bag or in any drugs that may be ordered? Not at all! Those things are like telephone calls to your reserve strength to come forth and do battle for your life. If these calls get a prompt affirmative answer, you are fairly safe, whatever the disease. But if his calls get no answer or one that is

too feeble, those who know you are likely to have the chance to offer your widow their condolences or congratulations, according to their thoughts of you.

THE DEFINITION OF "TO REPAIR"

The dictionary says that the verb *repair* means to "restore to a sound or complete state after injury, decay or partial destruction."

The body is capable of extensive repairs to injuries of which we are aware, as in broken bones or wounds. Some very important repairs are carried on without our knowledge, as when a person destroys the excreting tissue of the kidneys by the use of alcohol as a beverage and nature quietly replaces with scar tissue the tissue which was intended to excrete poisonous material. Of course the scar tissue is incapable of excretion, and if some emergency suddenly loads the body with poison so that life depends on getting it out promptly, the man is likely to join his ancestors years before it should have been necessary—but that, as the boys say nowadays, is "his hard luck."

And now we may see clearly the differences concealed in these words—*correct*, *cure*, *repair*—and understand some of their implications for us.

The professional man seeks to correct habits that will lead to disease or that already have done so. By correcting bad habits and by stimulation he helps the body cure itself of any pathology which has not become organic. When the damage is organic or destructive, the practitioner of the healing art repairs or aids in repair.

PURPOSES OF THE PROFESSION AND
THE ART

The purpose of the profession, then, is to prevent or to help the body to cure. The purpose of the art is to repair damage which the body cannot cure. The purpose of the business is to have ready the facilities for diagnosing, teaching, prescribing and repairing and to bring the instruction, prescription

and service within the financial reach of the greatest possible number of those who need them.

No, this letter will not "get you anywhere." But it might help you get ready to start intelligently. And the appallingly unsatisfactory financial results of a majority of dental practices seem to indicate that, at least now and then, starts have not been intelligent.

(To be continued)



[THE FUNCTION OF THE PULP]

When a tooth is first found to be complete in formation from a macroscopic standpoint, the work of the pulp is by no means completed. The vascular element still continues to deliver calcium salts to the odontoblasts, which in turn continue the process of eburation. As the process of dentin-building nears completion, atrophic changes take place in the vascular system, keeping pace with the ever-decreasing lumen of the pulp-chamber. Since the tooth, in its office as an organ of the body, exerts no physical effort, it produces no broken-down tissue, hence it has not been supplied with a lymphatic system. It has expended its youth and vigor in the construction of an ivory temple in which it may rest for the balance of its life.

—PRICE.

PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

Editor, Practical Hints:

Despite all the precautions that I may take, I have a case of swelling of the jaw once in a while after an extraction.

What is the treatment for such a swelling?

C. R. T.

ANSWER.—By no means is every post-operative swelling due to the operator. It may be caused by infection already present or by the necessary trauma of extraction.

Ice packs are probably the most efficient means of treatment, but care must be used as to the length of time of application. Twenty minutes on and twenty minutes off is fairly safe. A hot saline wash might be of value.

Editor, Practical Hints:

I have been a reader of THE DIGEST for many years, and I should like your opinion as to the moral and legal responsibility of a patient in the following case:

A patient, of a nervous temperament, residing in a neighboring town, had a lingual bar denture constructed three years ago.

After completing the denture and notifying the patient that it was ready for her, it was five months before I was able to persuade her to come to the office to get it (this was one of the peculiarities of the patient), and when she did come I also had an appointment to do some work for her daughter. At this time I spent about fifteen minutes, all the time left between trains, in fitting the denture, and a few days later perhaps thirty minutes, at which time I permitted her to wear it home, as it was apparently fundamentally right and apparently comfortable. However, she was given to understand very clearly that while it was apparently properly fitted, I should expect her to notify me or come back in case it gave her any trouble.

I did not see nor hear from the patient again, but learned about a year later that the family had moved, about a year after this dental work was done, to another state. No attention was paid to requests for payment until I began to press the matter, two years after doing the work, when the patient wrote me that the plate always hurt her mouth and was never satisfactory, and she

could not wear it and she was about to send it back to me.

Of course this is not an unusual case. Please base your opinion on the justice of the situation and the patient's moral and legal responsibility rather than the question of persuading the patient to pay or injury to her feelings.

I take the position, of course, that she understood plainly that I was assuming responsibility for the work if she would keep me informed as to how she was getting on with the denture, while her point was apparently that she could not wear it in spite of the fact that I had in two sittings tried to fit it, therefore she could not be expected to pay for it.

C. M. R.

ANSWER.—Legally and morally you are, without doubt, entitled to the fee for the denture. You explained to the patient the probable necessity for adjustments, and it was not your fault that she did not come in. Furthermore, the patient has had the denture for three years and presumably has used it, in spite of the fact that she is now willing to return it. However, the trouble and expense that would be entailed in trying to collect the fee would probably not make it worth while, in addition to the fact that the patient would probably broadcast just how poor a dentist she considered you to be.

Probably, since you knew the peculiarities of the patient, it would have been better if you had refused to do the work or had not delivered it until the fee was paid, explaining that this was the custom with prosthetic cases.

part of the root left in the socket. An abscess was forming and after the extraction the jaw was very badly swollen. A physician made an incision in the gum inside and drained the pus which had formed. The patient now threatens suit against the dentist.

Please send me any information regarding such cases, if you have any at hand.

F. E. P.

ANSWER.—It is very hard to form an opinion at this distance of the case you present. Lyons, of Ann Arbor, says that an abscessed tooth should not be extracted unless the extraction will provide drainage. Another authority states that if the tooth breaks, the entire root should be removed at that time or a definite understanding arrived at with the patient as to the consequences of leaving it in.

So the question really amounts to whether or not the extraction should have been attempted, in the first place, and, secondly, whether the patient insisted that no further work be done or the dentist just quit and said nothing.

If suit is instituted, the only thing to do is to put the case in the hands of a lawyer who is experienced in malpractice suits. Occurrences like this only emphasize the importance of carrying insurance that will cover such contingencies. Malpractice suits are increasing in number, but when the plaintiff discovers that the dentist is insured, the majority of the suits are dropped.

Editor, Practical Hints:

Editor, Practical Hints:

A very frail tooth was extracted and

Two weeks ago a married lady about 40 years of age presented for dental

treatment. I found the left upper third molar badly decayed with a history of lateral infection. The left upper first molar was carrying a gold crown, and the gingival tissue was not in good condition. I gave a tuberosity and anterior palatine novocain injection and removed both teeth, finding the roots of both giving indications of sepsis. The usual soreness and slight swelling followed that evening and the next day.

The second day the patient developed a marked swelling on the opposite side of the face which looked on first appearance like a submaxillary glandular involvement, except that there was also a marked swelling under the right eye.

I took her temperature and found it $101\frac{1}{2}$, with a history of lassitude and slight chill. I ordered the patient to bed and called her physician, who pronounced it erysipelas.

The case is now practically cured. Asepsis was strictly observed in making the injection, and sockets were syringed and painted with iodine after the extraction.

As this is an unusual occurrence, I should like to know if it could have been caused by the internal absorption of a streptococcus infection from the region of the extraction. There was no evidence of any abrasion on the right side of the face to indicate contagion from an external source.

G. S. S.

ANSWER.—The extraction, of course, opened up a path for the infection by way of the blood stream, but whether or not the infection came from the site of the extraction it is almost impossible to say. It might have come from some other source.

In any event, there is no need for you to feel responsible, as the infection might have occurred if no operation had been performed.

Editor, Practical Hints:

I am interested in doing dental work for four hundred orphans and find that supplying them with toothpaste, even at wholesale figures, is rather expensive.

I should appreciate it very much if you would give me a formula for a toothpowder (home-made).

E. A. S.

ANSWER.—We are sending you the formula for a toothpowder. A paste would not be practical, since it would have to be placed in airtight tubes. The parts indicate quantities by weight.

Calcium carbonate precipitated	30	parts
Magnesium carbonate	10	"
Orris root	15	"
Oil of peppermint	$\frac{2}{3}$	"

As a matter of fact, ordinary salt in water is as efficient as any preparation on the market and is of course very cheap.



DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All communications should be addressed to Elsie Pierce, care of
THE DENTAL DIGEST, 220 West 42d Street, New York, N. Y.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT-CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR GREATER EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE. YOU MAY HELP MANY GIRLS WHO ARE BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. PERHAPS YOU NEED HELP NOW. WRITE TO ELSIE PIERCE—SHE WILL HELP YOU.

Dear Miss Pierce:

Can you suggest anything that will remove oil spots from office linen? I have found your column very helpful.

R. G. H., Brooklyn

ANSWER.—It is assumed that these spots are "engine oil," and that it is a mineral oil. If we knew the kind of engine oil, we could determine just what its contents are and give a more positive formula for the removal of the stains. However, we suggest the following:

Soak the stains in carbon tetrachlorid and rub, then thoroughly wash in soap and water.

Another solvent is carbon disulphid, but this is very inflammable and poisonous and must be used in a well ventilated place and away from any flame. Because of its dangerous quality it is better to throw away any unused portion of the liquid.

Benzol, chloroform or turpentine also, if used when stains are fresh, will remove them. Apply the same as the

carbon tetrachlorid, and keep away from flame, especially the two first-mentioned.

While we are speaking of oil stains, it may be timely to mention some of the solvents for the removal of ordinary grease and vegetable oils, to wit: ether, chloroform, benzol, acetone, gasoline, naphtha, carbon tetrachlorid. For cod-liver-oil stains the last-mentioned chemical is best. For vaseline stains, use turpentine. Grease spots can usually be removed from washable materials with warm water and soap, those containing naphtha or kerosene being particularly effective.

Old stains such as mentioned here may have to be bleached from the fabric after the use of the solvents, and this should be done carefully. The bleaching agents should not be used in too concentrated a form or allowed to remain on the fabric too long. Some of the bleaches are Javelle water, hydrogen peroxid, oxalic acid, potassium permanganate, sodium hydro-

sulphite. Rinse well after using, and do not use except on white materials that can be washed.

May we ask our readers, when sending us a query about the removal of stains or any other question which pertains to certain materials or products, to give us the name and the type of product or material mentioned? This makes it possible for us to give more accurate and pertinent advice.

Dear Miss Pierce:

I should like to suggest to the ambitious dental assistants that during the dull periods they go over their files and send out letters to the patients who have not been in for a period of six months, and more, to two or three years. I did this last month, and out of 146 letters I made 89 appointments, all of which were kept. I was so pleased that I thought I would mention this to you.

I have a suggestion for the dentists also. I think it is a splendid idea to give the assistant a bonus, payable every six months, instead of a raise. Where this is done, it works out wonderfully. I personally get a certain percentage of the increase in cash over the previous year, and this makes me feel that I have a personal interest in the financial progress of the office and its advancement. I do not worry about my duties, but do them as they come along without a grudge. I have been in the field over eight years, and I hate to think of the day when I may have to leave it.

I want to thank you for your wonderful column in *THE DENTAL DIGEST*. I certainly look forward to reading it.

E. T., Chicago

We wish to thank E. T. for the splendid suggestion of the letters to patients who have not been in for a period of time. In some offices this is an established routine and has been found to be of great value, not only keeping the dentist busy but helping to keep the patients' oral conditions in good shape.

Regarding the bonus, this too is the procedure in some offices and is thought good business by some and looked upon unfavorably by others. We like to believe that professional individuals are less concerned about financial returns than about their service to humanity, but the fact remains that money is the only exchange for the necessities of life, and a five-dollar bill looks good to any one, be it dentist or assistant. Somehow it does act as a lubricant to one's enthusiasm, and so, whether it is a bonus or a raise every six months, it is encouraging to the recipient and, we believe, the incentive to greater effort. Let us hear from our readers on this point.

Dear Miss Pierce:

I am submitting two questions that I should like answered fully:

(1) Should the dental assistant ask the dentist what operation he is going to perform on each patient, or should she stand and watch what he is doing and then get out the necessary instruments for that operation?

(2) Should the dental assistant watch the patient while the dentist is working, or should she prepare the patient, the instruments, etc., and then leave?

I am puzzled, so please help me. I

like the work and have been doing it for a long while.

E. G. P., Pittsburgh

ANSWER.—Replying to your first question—a dental assistant should know prior to the time the patient is in the chair just what the dentist is going to do (or as nearly as possible), otherwise how can she prepare the patient and have the necessary instruments, medicaments or materials on hand for him? Every type of dental service requires a certain preparation of the patient by the assistant, from the simple pinning on of a napkin or towel, changing of headrest cover and preparation of a glass of water or mouthwash to the more complicated preparation for a surgical operation under general anesthesia. After a long while in the work of assisting, the assistant should be able to know exactly what to do for the patient and the dentist, excepting in emergencies or in case of the unexpected need of an infrequently used instrument, medicament, or piece of equipment or material, which the doctor will ask for.

If the assistant is observing, she will soon learn the doctor's methods, and she can tell by what he has done at the previous sitting just what he plans to do at the next. A day sheet prepared for the next day's work will be the reminder of each appointment and given operation, and the necessary preparation by the assistant will be according to these. A new assistant will have to be told by the dentist just what he requires, and this can be done in a few moments of conversation prior to the starting of the day's work, the assistant making a memorandum of it. If she is

in doubt, she should ask the doctor before the patient is ushered into the operating room.

Answering your second question—what the assistant shall do while the dentist is working depends upon his wishes. Some dentists require that the assistant stand at the chair during all operations; others do not but are satisfied to have the assistant in the room, where she can be called by some pre-arranged signal, such as a light tapping on the bracket table. Still others prefer that the assistant busy herself in the laboratory, x-ray room or business office while they are working on patients. When they are through, she can be summoned by the buzzer. Again let me say that this is controlled entirely by the wishes of each individual employer. There is no set rule. Some patients object to having an assistant watching them and what the dentist is doing, while others want the nurse to hold their hand or be right at their side, so this too is a factor that cannot be arbitrarily settled.

Efficient dental assistance is the product of close observation, initiative, tact and good judgment, based on a foundation of preliminary educational qualifications.

Dear Miss Pierce:

I should like to know an effective method for sterilizing operating-room equipment, such as table and cabinet tops and places which can be scrubbed with soap and water and wiped with a disinfectant. Please suggest one or two good disinfectants, also a pleasant deodorant for the entire office.

I find many helpful suggestions in your Questionnaire. A. N. P., Maine

ANSWER.—We suggest the following disinfectants: bichlorid of mercury, one tablet to a pint of water; phenol, one teaspoonful to a quart of water; lysol, 5% solution; pure alcohol.

The supply houses have prepared deodorants of various types and odors. Some offices use the oriental incenses in burners. Personally we believe that an office should be free from odors of all types (even pleasant ones), and this

can be accomplished if medicaments with strong odors are kept out of the operating room, when not in use, and stored in double containers with ground glass stoppers, and if linen, etc., is immediately removed and placed in covered receptacles. Efficient ventilation with plenty of fresh air and thorough cleanliness will do away with the need for deodorizers, if care is used in the handling of "smelly" drugs.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

A regular meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., will be held at the Hotel Pennsylvania, 33rd St. and Seventh Ave., New York, on Tuesday, February 10, 1931, at 7:45 p. m. There will be a lecture on *Local Anesthesia*, illustrated by moving pictures depicting the preparation of the local anesthetic, its application and manufacture.

The Society celebrated its ninth birthday at the meeting on December 9, 1930, the members acting as hostesses to members of the Fairfield County (Conn.) Dental Assistants Association, the Dental Assistants Association of Northern New Jersey, the Monmouth County of New Jersey Dental Assistants Association, and the Dental Assistants Study Club, Second District, New York. This Intercities Meeting was an interesting success. Juliette A. Southard, founder of the Educational and Efficiency Society, New York, presided. Papers were read by members, and several of the visitors addressed

the audience. A spelling contest on dental terms, in which all present participated, was won by Miss Mildred Schwartz. Refreshments were served before adjournment.

The class in Laboratory Technic and Gold Casting which has been in session since November has concluded its course, following a very instructive and profitable series of lessons. A group of members is studying under the direction of Dr. H. A. Bartels at the Columbia University School of Dentistry, Medical Center, 168th St. and Broadway, New York. The course includes instruction in sterilization, pathology and bacteriology, with the technic for taking smears, blood count and urinalysis. All members in good standing in the Society are eligible to join the classes and may secure further details by addressing Miss Mary A. O'Connor, c/o Dr. E. Reiner, Cliffside, N. J.

On Tuesday, February 17th, the Clinic Club will present a clinic at the meeting of the Westchester Dental Society and on Friday, February 27th,

before the Kings County Dental Society. The subject of these presentations is *Sterilization*, covering the thermal and therapeutic methods, with special attention to the use of the autoclave in preparation for root-canal work. At the December meeting of the Clinic Club an open forum on *Dental Assisting* proved to be a most instructive and entertaining program. *Chair Assisting* was the subject of the January meeting. The regular February meeting will take place on Monday, February

16, 1931. Members of the Educational and Efficiency Society for Dental Assistants, New York, are welcome at the meetings of the Club and are urged to lend their support to its activities.

The Society meets regularly on the second Tuesday evening of each month, October to May, inclusive, at the Hotel Pennsylvania, New York. A cordial invitation to attend is extended to the members of the dental profession and to their assistants.

Montreal Dental Assistants Association

The Montreal Dental Assistants Association held its first monthly lecture of the season on December 8, 1930, at the Montreal Dental Club Room.

F. W. Saunders, D.D.S., Oral Surgeon of the Royal Victoria Hospital Staff, addressed a large number of dental assistants. Dr. Saunders outlined the history of ultra-violet treatments as used in dentistry. He very ably traced

the development of knowledge about the sun. He pointed out how the ancients worshipped the sun as the chief health-giving element in the universe. It is only of late that people have begun to realize the value of the sun's rays. Dr. Saunders gave a demonstration, ably assisted by Dr. McDonald. Dr. A. L. Walsh, Dean of the McGill Dental Faculty, kindly loaned the instruments for demonstration.



BOOKS RECEIVED

A BOOK MAY BE AS GREAT A THING AS A BATTLE—DISRAELI

Dental Mechanics—A Manual for Students and Junior Practitioners, by E. Lloyd-Williams, T.D., M.R.C.S., L.D.S., Eng., L.R.C.P. Lond., L.S.A., Lieut.-Colonel R.A. M.C. (T.A.) retired; Late Senior Dental Surgeon, Westminster Hospital, and Senior Dental Surgeon and Lecturer on Dental Mechanics, Royal Dental Hospital of London.

In the preface the author states that this book is intended only to make suggestions rather than to convey information, and that it follows closely the technic carried out in his own practice. Only the construction of dentures is described, since the author does not believe in crown- and bridgework.

The style is informal, and many parts of the text will not be easily understood by the American dentist, as certain materials that are mentioned are not in common use in this country. In one place, for example, the use of stale beer is recommended in a certain procedure, though a substitute for this supposedly forgotten beverage is

offered. Several pages are devoted to the use of springs on full dentures, which bring to mind Revolutionary days and the dental equipment of George Washington.

Doubtless this book fulfills the object of the author, but we are very much afraid that there will be little demand for it on this side of the water.

236 pp., with appendix and index. London, England: John Bale, Sons & Danielsson, Ltd., 1931.—A. M. J.

Diet and the Teeth: An Experimental Study—Part I, Dental Structure in Dogs, by May Mellanby.

The work of Mrs. Mellanby is too well known to need any review. In this volume we have, for the first time collected in book form, her studies of the relations of diet to the structure of the teeth and jaws in dogs. It will be a valuable addition to the libraries of those interested in this subject.

308 pp., with 109 plates. London, England: His Majesty's Stationery Office, 1929.—A. M. J.



EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

Music covers a multitude of sins.

To some mothers life is just one darned stocking after another.

When a bachelor flatters himself that he knows women, he flatters himself.

The reason some people don't smile oftener is that they're not sure that their teeth will stay in place.

(Sonny)—Dad, was that bottle of red ink you bought very dear?

(Dad)—No, not very.

(Sonny)—Then I wonder why mother was so furious when I spilt it on the carpet!

Once upon a time there was a parrot who used to swear terribly. One day he escaped from his cage and wandered on to the golf links and died of shock.

(Coleslaw)—So you got your poem printed.

(Cabbaggio)—Yes, I sent the first stanza to the editor of the question column with the inquiry, "Can anyone give me the rest of this poem?" Then I sent in the complete poem over another name.

A famous literary woman was often asked by her friends why she never married. "Well," she would reply, "I have three pets at home which almost answer the same purpose as a husband. I have a dog which growls all the morning, a parrot which swears all the afternoon, and a cat which comes home late at night."

A Scotchman had to have his teeth out, but the idea of paying a dentist's bill gave him the willies. He planned it all right, however, to suit himself. He went to a neighborhood dentist, picked a fight with him and had them knocked out for nothing.

(Hubby)—Do you mean to say there's only one course for dinner tonight?

(Young Wifey)—Yes, dear. You see, when the chops caught fire and fell into the sweets, I had to use the soup to put it out.

A PLEASANT OCCUPATION

"It must be awful to be a debt collector. You must be unwelcome wherever you go."

"Not at all. Practically everybody asks me to call again."

ONE ON MA

(Mother)—Is it true that you put an advertisement in the paper to obtain a husband?

(Daughter)—Yes.

(Mother)—I don't know what your father would say to such scandalous goings on. Did you get any answer?

(Daughter)—Only one—from father.

A pair of shoes and a set of false teeth were unearthed on an old baseball field near Chicago. It is supposed that the rest of the umpire escaped.

"Madam," said the hungry tramp, "could you give a fellow a helping hand whose occupation is completely gone?"

"What was your occupation, my good man?" inquired the kindly housewife.

"I used to step on lighted cigars and smoulderin' cigarettes so they wouldn't set ladies' skirts on fire."

(Husband)—Well, dear, I have to be properly dressed up today to attend a special meeting, and I'm all ready now except for my high hat. Will you please get it out for me?

(Wifey)—Goodness gracious, Henry, I forgot to tell you that your topper is now hole six in the children's pee-wee golf course.

A will missing for over fifty years was found in a family Bible in Detroit. Somebody accidentally knocked the Bible off the parlor table.

(Teacher)—Does any boy in the class know how Samson died?

(Bobby)—Yes, teacher, he died of fallen arches.

The little penguins look alike,
Even as Ike resembles Mike;
They are so gentle and so nice,
God keeps these little birds on ice.

THE HEALTHY WAY

He who eats cabbage has a good head.
Open your window and throw out your chest.
Eat 18-carrot soup.
Eat fish and watch the scales.
Take your daily ride along the milky way.
A tooth brush in time will save many a dime.
The road to wealth is paved with health.
Say it with vegetables.

The melancholy days have come,
To us with colds they're sad.
But, on the other hand, they make
M. D.'s and druggists glad.

FUTURE EVENTS

THE CHICAGO DENTAL SOCIETY will hold its Sixty-seventh Annual Mid-Winter Meeting at the Stevens Hotel, Chicago, Ill., February 2-5, 1931.

Because of the great demand of previous years, the transactions of this meeting will be bound and made available to those who wish them.

The Program Committee, Stanley D. Tylman, Chairman, will present one of the best programs in the history of the Society.

The manufacturers' and dealers' exhibits will be in the exhibition hall of the hotel and will, as always, be a center of attraction. C. Davidson is chairman of this committee.

The Society extends a cordial invitation to attend to all members of the American Dental Association.

HARRIS W. McCLAIN, *President*,
HOWARD C. MILLER, *Secretary*,
55 East Washington Street, Chicago, Ill.

THE EASTERN DENTAL SOCIETY OF THE CITY OF NEW YORK will hold its next regular meeting at the Allied Dental Council Auditorium, 425 Lafayette St., New York, on February 5, 1931.

David Slutskin, D.D.S., will lecture on *Fixed Bridgework*.

Simon Shapiro, D.D.S., will lead the Round Table Discussion.

Preceding the paper, at 7:00 p. m., clinics demonstrating the newer concepts of bridgework will be given by the following:

Finn J. Bronner	Walter Schilke
Aaron I. Brown	H. Seides
S. Charles Gardner	J. Selverstone
Charles Goodman	Benjamin Shapiro
J. F. Lief	J. Shapiro
William J. Meier	Jos. A. Viverito
Frederick W. Pratt	S. Waterman
M. B. Rubin	M. H. Zeisler
Jacob Schaffer	

There will be an important meeting on dental economics on March 5, 1931.

THE DALLAS MID-WINTER DENTAL CLINIC will be held in Dallas, Texas, February 16-18, 1931.

H. G. Morton of Milwaukee, Wis., will be the clinician in crown- and bridgework, and Arthur C. Engle of St. Louis, Mo., the clinician in surgery. The clinician for prosthetics is yet to be selected.

THE SOCIETY FOR THE ADVANCEMENT OF GENERAL ANESTHESIA IN DENTISTRY will hold its next meeting at the Barbizon-Plaza, 58th St. and Sixth Ave., New York, on Monday evening, February 16, 1931. The meeting opens with a dinner at 7:00 p. m., and the scientific session is scheduled to start promptly at eight o'clock. Reservations for the dinner may be made through either the president or the secretary.

Aaron E. Parsonnet, M.D., of Newark, N. J., will be the essayist and will speak on *The Heart During Anesthesia*. Dr. Parsonnet is Visiting Internist and Cardiologist at the New York Beth Israel Hospital, Fellow of the Witkin Foundation for the Study and Prevention of Heart Disease, Fellow of the Academy of Medicine of Northern New Jersey, author of a standard textbook on electro-cardiography, and Medical Director, Daughters of Israel Home for the Aged.

Following the discussion, which will be open to the general membership, an intimate conference on anesthetic problems of interest to the general practitioner will take place.

Membership in this Society is open to all ethical practitioners, and correspondence is invited. Meetings are held four times a year, on the third Mondays of February, April, October and December, in New York.

M. HILLEL FELDMAN, D.D.S., *President*,
730 Fifth Ave., New York, N. Y.

LEONARD MORVAY, D.D.S., *Secretary*,
76 Clinton Ave., Newark, N. J.

JAMES T. GWATHMEY, M.D.,
Honorary President,
30 West 59th St., New York, N. Y.

THE WESTCHESTER DENTAL SOCIETY will hold its fifth scientific session of the season at the Community Center, 122 South Broadway, Yonkers, N. Y., at 8:30 on Tuesday evening, February 17, 1931.

It will be All-Clinic Night. Leading manufacturers and dental laboratories will exhibit and give table clinics.

All interested are cordially invited to attend.

THE KINGS COUNTY DENTAL SOCIETY will hold its Second Mid-Year Meeting for Progressive Dentistry at the new St. George Hotel, Brooklyn, N. Y., February 25-27, 1931.

An exceedingly gratifying program of essays

by men of high merit on dental subjects of keen interest to every practitioner has been arranged. There will be illuminating clinics covering every phase of dental practice by clinicians of special aptitude and technical ingenuity.

There will be a manufacturers', dealers' and laboratories' exhibit in the Grand Ball Room of the Hotel. Also, there will be special exhibits by the Dental Department, New York Board of Health; New York Tuberculosis Society, the American Red Cross Society, the Oral Hygiene Committee of Greater New York, the Dental Hygienists' Society, the Kings County Dental Association, and also an exhibit of the arts and crafts of the avocations and hobbies of dental practitioners.

On Saturday evening, February 28th, will be held the annual banquet and dance in the Grand Ball Room.

CHARLES OGUR, *Chairman*.

THE KINGS COUNTY DENTAL SOCIETY will hold its regular meeting in conjunction with the Kings County Mid-Year Meeting for Progressive Dentistry at Hotel St. George, Clark and Clinton Streets, Brooklyn, N. Y., on Thursday, February 26, 1931, at 8:30 p. m.

J. Galvin Woodworth, D.D.S., of Buffalo, N. Y., will speak on *Engineering and Construction of Partial Removable Appliances*. This paper will be illustrated with lantern slides.

Preceding the meeting, between 9:30 a. m. and 12:00 noon, Dr. Woodworth will give a clinic on the same subject, illustrated with enlarged photographs, models and drawings, at the Hotel St. George.

J. L. FELSENFELD, *President*.
HERMAN AUSUBEL, *Chairman*,
Educational Committee,
1 DeKalb Ave., Brooklyn, N. Y.

THE CENTRAL PENNSYLVANIA DENTAL SOCIETY will hold its Annual Meeting at the Fort Stanwix Hotel, Johnstown, Pa., March 2-4, 1931.

The committee is preparing a program which will be both interesting and of scientific value.

Formal announcements will be mailed the latter part of November to the dental manufacturers.

RALPH M. WOLFORD, *President*,
600 Johnstown Trust Bldg., Johnstown, Pa.

THE MINNESOTA STATE DENTAL ASSOCIATION will hold its Forty-Eighth Annual Meeting in the Auditorium, Minneapolis, Minn., March 4-6, 1931.

Martin Dewey, President-elect of the American Dental Association, will be present.

One of the features of the meeting will be the clinical program, which will include a special section devoted to guest clinicians.

A cordial invitation is extended to all members of the American Dental Association.

GEO. D. ESTES, *Secretary*,
911 Medical Arts Bldg., Minneapolis, Minn.

THE AMERICAN SOCIETY OF STOMATOLOGISTS will hold its Eighth Anniversary Meeting at Hotel McAlpin, New York, N. Y., April 16-17, 1931.

The general session will be held on April 16th at 8:30 p. m. The lecture clinics will be held on April 17th, in the afternoon. Three reports will be presented: (1) on professional education; (2) on a plan for the reduction of costs of dental care; (3) on the program of the First International Stomatologic Congress to be held in Budapest, September 2-7, 1931.

For further particulars, address

ALFRED J. ASGIS, *Secretary*,
509 Madison Ave., New York, N. Y.

THE AMERICAN BOARD OF ORTHODONTIA, created by the American Society of Orthodontists in 1929 and incorporated in January, 1930, in the State of Illinois, will hold a meeting at Hotel Jefferson, St. Louis, Mo., on April 20, 1931, at 9:00 a. m.

Orthodontists who desire to qualify for a certificate from the Board should secure the necessary application form from the secretary. Attention is called to the following resolutions adopted by the Board:

"Any person desiring to make application to the Board for a certificate shall have been in the exclusive practice of orthodontia for a period of not less than five years or an equivalent to be determined by the Board and based upon the following conditions: (1) an instructor in orthodontia in a school satisfactory to the Board; (2) an associate in the office of an orthodontist whose standing is satisfactory to the Board. It is, however, to be definitely understood that any person at the time of making application for a certificate shall be in the exclusive practice of orthodontia in his own name."

ALBERT H. KETCHAM, *President*,
1232 Republic Bldg., Denver, Colo.

OREN A. OLIVER, *Secretary*,
1101 Medical Arts Bldg., Nashville, Tenn.

THE AMERICAN SOCIETY OF ORTHODONTISTS will hold its Thirtieth Annual Meeting at the Jefferson Hotel, St. Louis, Mo., April 21-24, 1931.

HARRY E. KELSEY, *President*,
833 Park Avenue, Baltimore, Md.
CLAUDE R. WOOD, *Secretary*,
Medical Arts Bldg., Knoxville, Tenn.

THE LOUISIANA STATE DENTAL SOCIETY will hold its next annual meeting in New Orleans, La., April 23-25, 1931.

JULIAN S. BERNHARD, *Secretary*,
417 Medical Arts Bldg., Shreveport, La.

THE KANSAS STATE DENTAL ASSOCIATION will hold its Sixtieth Annual Convention at Hutchinson, Kansas, April 27-29, 1931. Among the essayists will be Percy R. Howe of Boston and Sterling V. Mead of Washington, D. C.

All members of the American Dental Association are cordially invited to attend.

FRED A. RICHMOND, *Secretary*,
305 Federal Reserve Life Bldg.,
Kansas City, Kansas.

THE CONNECTICUT STATE DENTAL ASSOCIATION will hold its Sixty-Seventh Annual Meeting at Hartford, Conn., April 28-30, 1931.

JOHN F. THOMPSON, *Chairman*,
Publicity Committee,
902 Main St., Hartford, Conn.

THE MASSACHUSETTS DENTAL SOCIETY will hold its Annual Meeting at the Hotel Statler, Boston, Mass., May 4-7, 1931.

FRANK A. DELABARRE, D.D.S., *President*,
520 Beacon St., Boston, Mass.

THE MASSACHUSETTS DENTAL HYGIENISTS' ASSOCIATION will hold its next Annual Convention at the Hotel Statler, Boston, Mass., May 4-7, 1931. All registered dental hygienists are urged to attend.

THE PENNSYLVANIA STATE DENTAL SOCIETY will hold its Sixty-third Annual Meeting at the William Penn Hotel, Pittsburgh, Pa., May 5-7, 1931.

A full program of papers and demonstrations is being arranged, together with several innovations. An attractive social program for members and those accompanying them is in course of preparation.

A cordial invitation is extended to all dentists who are members of the American Dental Association.

W. HARRY ARCHER,
Chairman Publicity Committee,
322 Jenkins Arcade, Pittsburgh, Pa.

THE SOUTH CAROLINA STATE DENTAL ASSOCIATION will hold its Sixty-first Annual Meeting at Columbia, S. C., May 7-8, 1931.

N. W. MACAULAY, *Secretary*,
Medical Bldg., Columbia, S. C.

THE TEXAS STATE DENTAL SOCIETY will hold its Fifty-first Annual Convention at Houston, Texas, May 12-15, 1931. A cordial invitation to attend is extended to all dentists who are members of the American Dental Association.

For information relative to exhibits, write to Dr. E. A. Morris, Chairman, 1518 Medical Arts Bldg., Houston, Texas.

TOM F. COYLE, *President*,
Orange, Texas.

J. G. FIFE, *Secretary-Treasurer*,
Medical Arts Bldg., Dallas, Texas.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its Sixty-third Annual Meeting at Hotel Pennsylvania, New York, May 12-15, 1931.

A cordial invitation is extended to all dentists, members of the American Dental Association and to all ethical Canadian dentists.

John T. Hanks, 17 Park Avenue, New York, is Chairman of the Exhibits Committee. Address Dr. Hanks for information relative to space and terms.

Fred R. Adams, 8 West 40th St., New York, is Chairman of the Clinic Committee. Under his direction a new plan will be presented in the presentation of the Educational Clinics. Dr. Adams will be pleased to hear from ethical dentists willing to present clinics of merit.

For general information, address the Secretary.

ALFRED WALKER, *President*,
100 West 59th St., New York, N. Y.

A. P. BURKHART, *Secretary*,
57 East Genesee St., Auburn, N. Y.

THE DENTAL HYGIENISTS ASSOCIATION OF THE STATE OF NEW YORK will hold its Eleventh Annual Meeting at the Hotel Pennsylvania, New York, May 12-15, 1931.

A cordial invitation is extended to members of the dental profession, dental hygienists and dental assistants.

EVELYN M. GUNNARSON, *President*,
MABEL ERCKERT, *Corresponding Secy.*,
18 East 48th St., New York, N. Y.

THE INDIANA STATE BOARD OF DENTAL EXAMINERS will meet in the House of Representatives Room of the State House, Indianapolis, Ind., on June 15, 1931, at 8:00 a. m., for the purpose of conducting an examination of all applicants for licensure in Indiana who come with proper credentials and are accepted for examination.

All applications should be in the hands of the secretary one week before the meeting. The

examination will probably last through four days. For applications, clinical requirements and other information, address

J. M. HALE, *Secy.-Treas.*,
Mount Vernon, Ind.

THE SECOND INTERNATIONAL ORTHODONTIC CONGRESS will be held at the Savoy Hotel (not the Hotel Great Central as previously announced), London, England, July 20-24, 1931.

A full program of papers and demonstrations has been arranged and a Museum will be a prominent feature of the Congress.

An attractive social program for members and those accompanying them is in course of preparation.

Letters setting out the conditions under which contributions to the proceedings are invited, together with copies of the Congress Rules and application forms for membership, have been sent

to all known to be interested in orthodontics, and the Secretary-General will be happy to send all such information to any one applying for it.

Regular membership in the Congress is limited to those who are members of organizations which are component societies of the Congress.

Subscribing membership is open to all persons of repute, irrespective of society membership, although subscribing members have no right to vote or hold office in the Congress.

J. H. BABCOCK, *President*,
B. MAXWELL STEPHENS, *Secretary-General*,
76 Grosvenor St.,
London, W. 1, England.

THE AMERICAN DENTAL HYGIENISTS' ASSOCIATION will hold its Eighth Annual Session in Memphis, Tenn., October 19-23, 1931.

AGNES G. MORRIS, *Secretary*,
886 Main St., Bridgeport, Conn.



THE DENTAL DIGEST

VOLUME XXXVII

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NUMBER 3

Ulcerative Stomatitis, Its Diagnosis and Treatment*

(VINCENT'S INFECTION)

By JAMES L. ZEMSKY, D.D.S., New York, N. Y.

Oral Surgeon, Midtown Hospital; Lecturer on Oral Surgery, Postgraduate Courses, Allied Dental Council, New York; Author of the Books *Oral Diseases* and *Outline of Oral Surgery*.

In this brief talk on ulcerative stomatitis, more correctly termed *Vincent's infection of the mouth*, I intend to describe a therapeutic procedure which has proved very successful in treating clinic patients afflicted with this lesion. A method of treating Vincent's infection which has proved satisfactory in handling clinic patients is an attestation of its efficacy, and for the following reason:

Clinic patients suffering from Vincent's infection of the mouth present an "acid test" of the procedure employed, and therefore a method which has "stood the test" and proved of great value must necessarily possess sufficient merit to warrant its serious consideration.

The reason why clinic patients suffering from Vincent's infection present a much more difficult problem than private patients is readily appreciated by those who have had an opportunity to work in hospitals. It has been my experience that clinic patients suffering

from Vincent's disease do not follow the instructions that are given them. This, in my opinion, is due not only to the circumstances which at times do not permit the patient to carry them out, but to what I consider a *lack of spirit of cooperation*. It has been my observation that patients who are given treatment absolutely gratis or who pay only a few pennies for it do not value the service rendered. They do not take the "clinic" doctors seriously, their belief being that such doctors have not the patient's interest at heart, and consequently that there is no use in following their advice. This is in contrast to their religious execution of all instructions when under the care of private doctors, particularly if these are paid "good and plenty." The lack of cooperation on the part of the patient suffering from Vincent's infection of the mouth spells *failure* in the management of such cases. This is due to the nature of the disease, which I am going to consider now.

Vincent's infection of the mouth, as the name implies, is an infectious disease, affecting the oral mucosa and periodontal tissues, caused by an invasion of these structures by Vincent's

* From a clinic presented at the Joint Session of the First and Second District Dental Societies of the State of New York at the Sixth Better Dentistry Meeting held on December 4, 1930, at Hotel Pennsylvania, New York.